



FEBRUARY 1959

VOLUME 99

NUMBER 2

### Realism

Probably Ben Knutson of Alamosa, Colorado, is the master photographer of flying and moving bees. For detail and clarity and sharpness this flying nectar gatherer is almost perfect. It takes hours of patience and photographic know-how to produce a result like this.



# American BEE Journal

*Dedicated To The Progressive Future Of The Bee Industry*





The Office of York Bee Co.

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ITALIANS  
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STARLINES  
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MIDNITES

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S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

#### APRIL - 1959

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#### MAY - 1959

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17	18	19	20	21	22	23
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## Final Mystery Guest and Scramble Results for December

This issue closes out both contests. There is only enough room for a list of the winners for the Mystery Guest contest and for two letters. Robert Smythe and Marc Horguelin tie for first. Number two winner Curtis Olson, Zumbrota, Minn.; third, W. P. Kinard, Louisville, Miss. Thanks also to Harry Strand, Poplar, Wis.; James E. Glover, Corpus Christi, Texas; Emil J. Kovar, Chula Vista, Cal.; Howard Lambert, Climax, No. Car.; Otto H. Mertens, Reinbeck, Iowa; Mrs. Jessie Berg, Nisswa, Minn.; A. M. Brown, Frederick, Wis.; Fabian Anderson, St. Paul, Minn.; and C. O. Lee, Eau Claire, Wis.

From Robert Smythe, Monte Visto, Col.

The "Mystery Guest" for December is Dr. Mykola H. Haydak of the University of Minnesota.

This outstanding scientist in the beekeeping field was born in the Ukraine. After completing high school he studied at the University of Kiev, Ukraine, the University and Polytechnic Institute of Prague and the Ukrainian Agriculture Academy in Podesbrady, Czechoslovakia. In 1927 he received the American equivalent of his M. S. from the College of Agriculture and Forestry at the Polytechnic Institute at Prague. He worked for two and a half years at the state bee culture institute of Czechoslovakia, for five months in charge of the bee culture station there. Coming to the United States in 1930, he studied under H. F. Wilson and Harry Steenbock on problems of bee nutrition. During the summer of 1930-1931 he worked at the U. S. Bee Culture Laboratory and in June 1933 received his Ph.D. at Wisconsin and since has been doing research and teaching at the University of Minnesota. Some of his most important work has been on the role of honey in nutritional anemia, the vitamin content of honey, and honey in human nutrition, as well as in the field of pollen supplements, swarming and related subjects. He has over 150 publications to his credit.

We, of the beekeeping industry especially, should extend our respect and appreciation to this fine scientist for the many outstanding contributions he has

made to the science of apiculture. My hat is off to him.

From Marc Horguelin, Fort de France, Martinique

This "smartly upright and vivacious person" is Dr. Mykola H. Haydak, professor at the University of Minnesota, Division of Entomology and Economic Zoology, St. Paul. Dr. Haydak was born in the Ukraine. After high school he studied at the University of Kiev, the University and Polytechnic at Prague, and in 1927 received the equivalent of an M.S. degree from the College of Agriculture and Forestry at the Polytechnic Institute at Prague. After working for two and a half years at the state bee culture institute and in charge of the bee culture station there, he chose liberty and came to the United States in 1930. During the summers of 1930 and 1931 he worked at the U. S. Bee Culture Laboratory and in 1933 received his Ph.D. at the University of Wisconsin.

Since his attachment to the University of Minnesota he has been doing an enormous work in everything pertaining to beekeeping. As a scientist and teacher he has over 150 publications to his credit, among them about the queen honey bee, the nutritional value of honey, bee stings, "Beekeeping in Minnesota," and continual contributions to the "Minnesota Beekeeper." He lives in St. Paul and manages many colonies of bees at the University Farm. I was pleased to take colored slides of his fine bee yards and record skyscrapers. I am proud and honored to have met him.

### December Scramble — G. H. Cale

The winners, No. 1, W. P. Kinard, Louisville, Miss.; No. 2, Harry T. Starnes, Crawfordsville, Indiana; No. 3, Marc Horguelin, Fort de France, Martinique. Thanks to the others. Glad you have all played our game so well all year.

Here is a shortened reply from W. P. Kinard: "When I got my copy of ABJ I knew it was the face of the one we all look forward to, especially in 'All

Around the Bee Yard." This fine picture of Glory Hallelujah brings responsive smiles of pride and affection from many far and near. Few beekeepers there are who do not know him not only as our Editor but as a beekeeper and research coordinator who has contributed so much to beekeeping. He was formerly a professor in the University of Maryland and Extension Apiarist for the U.S.D.A. Division of Bee Culture. He accepted the position with ABJ and Dadants in Feb. 1921."

### Our Designer and Artist



A very good picture of Jim Higdon who designed this year's cover and who produces much art work both for the Journal and for Dadants. He is with The Hamilton Press that prints this magazine. Jim would like to see some fine photos sent in for the cover for 1959. How about it? Pictures must not be just bee yards and they must tell a story. Photographically they must be sharp and clear to make a good engraving. What have you?

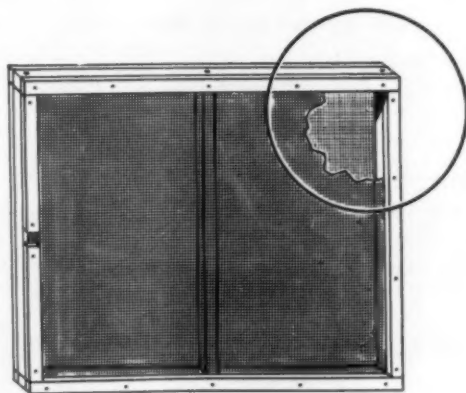
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### *The American Bee Journal Hamilton, Illinois*

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# Swing to Sideline

Well, Sideliners, you were promised this February "Swing" and here it is. The Commercial boys have to take a short back seat. This back and forth Swing may continue through the year; more likely it will be interrupted by others to get stories in print that have been holding just for space and time. Several have already expressed pleasure at this change. At least one reader says he can't make up his mind. None have said they don't like it.

There are about fifteen stories in this Sideline Swing. That is good. The Commercial one last month was too heavy with long articles. Now for a few comments; note that story by Charles Park on city bee-keeping. Woe is me! What can happen next? Guess he can get chucked out of town by the town fathers. - - - Then Howell of Colorado boasts of four generations but mainly he delights with how he and Mamma take to the wilds. Makes us all wistful. - - - Lueddecke's roof-top bees make some of the rest of us envious because of the crop. However he has other bees (not figured of course)! - - - S. S. Miner does a good job pointing us up on hive painting. Pride in nice equipment! We all have it but most do nothing to earn it.

We did get in more "Have You Tried This" this time in the Swing. But not enough miscellaneous pictures. How does a harried Editor become satisfied?

By the way when are *you* going to send an article?



Where did this picture come from? What a picture file that gives no information about the source of a picture! Could be a bee yard with a small house we once saw in North Dakota belonging to a farmer who plowed almost an hour around one field before he reached his gate. Could be one belonging to some millers we visited in New York State. Anyway it is a real fine, small honeyhouse, and a nicely arranged yard. Any Sideliner would be proud as punch with an outfit like this.

# The HOWELLS of Colorado

## FOUR GENERATIONS

Grover Howell is standing at the right, his mother in the center with a pail of Howell's honey, his son at the left, holding his son, making four generations.



This picture shows four generations of Howells. I stand at the right, my mother in the center with a pail of Howell's honey, my son at the left holding his son, my grandson, making four generations.

I have kept bees in the Uncompahgre Valley for thirty five years and during that time have never had a crop failure although the per colony yield has been pretty low some years. My bees averaged 70 pounds per colony in 1958 and that is a little above average. Our main flow here in the Valley is from yellow and white sweet clover and alfalfa. In spring we have dandelion for the bees to build up on for the main flow, although sometimes the weather hinders in this build-up period.

We have parks around the Valley where we move some of the bees for clover flow. There is some advantage there as some of the farmers

raise seed and the honey from these higher altitudes is lighter in color and a better grade than that produced in parts of the Valley. We pack some of the honey for local trade in 1 pound and 2 pound containers and in 5 pound pails. I think every beekeeper should sell as much honey as he can in his local community as it helps keep the per capita consumption up.

The bees have helped me raise the good looking boy in the picture and two good looking girls and they are now married with families of their own. When the bees get to working good on yellow clover, Mrs. Howell and I load our camping outfit on the pickup and take off for one of the beautiful lakes on Grand Mesa to fish for two or three days. We believe that a little outdoor life is just as important as working with our bees.

Colorado

those of you who have had occasion to sit down and insert four brass eyelets into each of four hundred or more end bars know what a boring operation it can get to be, but insert them I did one by one with the little tool you buy.

One day I was watching some window trimmers working, very fascinating too, when I noticed the staple tacker they were using, how fast and easy it seemed to be. Inspiration, why not use staples to keep the wires from cutting into the end bars instead of the brass eyelets. Fortunately I knew where I could borrow one before investing in the idea, so I hurried home to give it a try.

First, divide your end bars into two equal piles. Then you have to visualize which way your wire is going to run, that is, where it will start, which hole it will go into first, the course it will take to the next hole, where it will go in, etc. This is very important as you want the staple back to be between the wire and the wood. Using eyelets, this is of no consequence as the entire inner surface of the hole is protected, but with staples only one edge of the hole is reinforced. I find it very helpful to actually take one frame and completely assemble it, wire and all before starting to go into any kind of a mass production set-up. This is a little bit tricky and you can get a much better idea of where to put the staples if you are actually looking at an assembled and wired frame.

Lay the first half of your end bars out flat and staple away. After they all have staples in the proper place in relation to each hole, stack them on the side being very careful

(Turn The Page)

## Away With Eyelets

by Warren G. Singer

The thing that was most forcibly impressed on me in my first year of beekeeping was the importance of good combs, as perfect as it is possible to get them. Like all of you who had the misfortune of not having your first efforts guided by an old Bee Man, the first equipment I assembled by myself was, to put it mildly, a very sloppy job. Frames were not nailed properly, end bars not put in correctly, and worst of all, foundation was not centered and secured in the middle of the frames. Today I would not allow such equipment in my apiary, but at that time it seemed to me to be a very good job.

So I happily proceeded with my beekeeping for about four months. Gradually it dawned on me that those combs were not all they should be. Reading and studying everything I could find on the subject of combs, it was impressed on me again and again the importance they played in an efficient operation. To you other beginners and amateurs let me add my bit to the chorus of good advice, your combs are your most valuable item in the whole hive.

This being before the days of cross-wired foundation, the best advice I could find advocated horizontal wiring of foundation, with the use of brass eyelets to keep the wire from cutting into the end bars. Now

to keep from getting them mixed with the other half. Now turn the sample frame so the other end bar is facing you and staple the other half of the end bars with each staple in its proper relation to the hole as best suits your method of wiring.

Use  $\frac{1}{4}$ " staples so the leg does not come through the other side of the end bar. Be very careful to get your staples in the proper place and they will do the job as well as an eyelet, and I think you will agree this very tedious but so necessary job will become a pleasure.

## Bees In An Open-Air Colony

by Paul Cravey



This most unusual colony of bees was encountered in late spring, 1956. Their total development of brood and food-storage comb would not have been contained by three full-depth hive bodies. The mass measured 31 inches from the limb from which it was suspended to the bottom extremity, and was eight combs in thickness. Width of these combs varied, but the widest were about 20 inches. They were attached to a lower limb of a large live oak tree, at a point where the limb had a diameter

of less than three inches, and were protected from weather by nothing other than the leaves of the tree above.

Bees living in such conditions were new in my experience and I was frankly dubious when a friend told me of having seen them while hunting. Nevertheless, I drove 30 miles to the location to investigate.

The tree was large and spreading, with ends of large limbs almost touching the ground, as is typical of the live oak in this area, and the

bees were not to be seen from a distance. Probably at the time when they attached themselves as a new swarm to the limb of this tree, the point of attachment was ten feet in height, but as they added weight the limb bent lower until at the time of removal this point was only about seven feet high.

Removal was simple and without incident. I fitted slabs of comb filled with brood and honey, and some with honey only, into full-sized frames and filled the lower story of a ten-frame hive body. I believe almost all the brood was saved unharmed. Two frames of partly-capped honey were placed in a deep super above, with eight frames of undrawn comb foundation. An empty shallow super had to be added above this to accommodate the great number of bees.

Many bees were transferred to the hive on these combs, which were cut out and moved with relatively little disturbance. As removal proceeded upward, light smoking drove the greater mass of bees off the comb and onto the limb. After removal was complete, a sharp blow a few feet up the limb dislodged most of these bees into the open hive below and the lid was put into place.

The queen was not seen at this time, but subsequent good condition of the bees indicates the original queen survived, as no queen cells were observed in handling the comb.

In addition to a good healthy colony of bees, I gained a small quantity of very good light honey, and some pounds of rendered wax. The outer combs were not filled with honey, and were very white. Whether the bees did not fill them because of their exposure I can only guess.

Wax covered the entire area of the top of the combs, and several channels were so arranged that water falling on top would be led off the outside perimeter or down only three passages through the hive.

In addition to these things, I also gained a very interesting experience. Persistent inquiry has resulted in finding only one beekeeper here who has ever seen bees living in such conditions. Possibly it might be more common in a drier climate. I have regretted moving such a rare edifice as these bees had constructed. Should I ever find another such colony, I will either move them to my premises intact, or I will leave them where they are.

Houston, Texas.



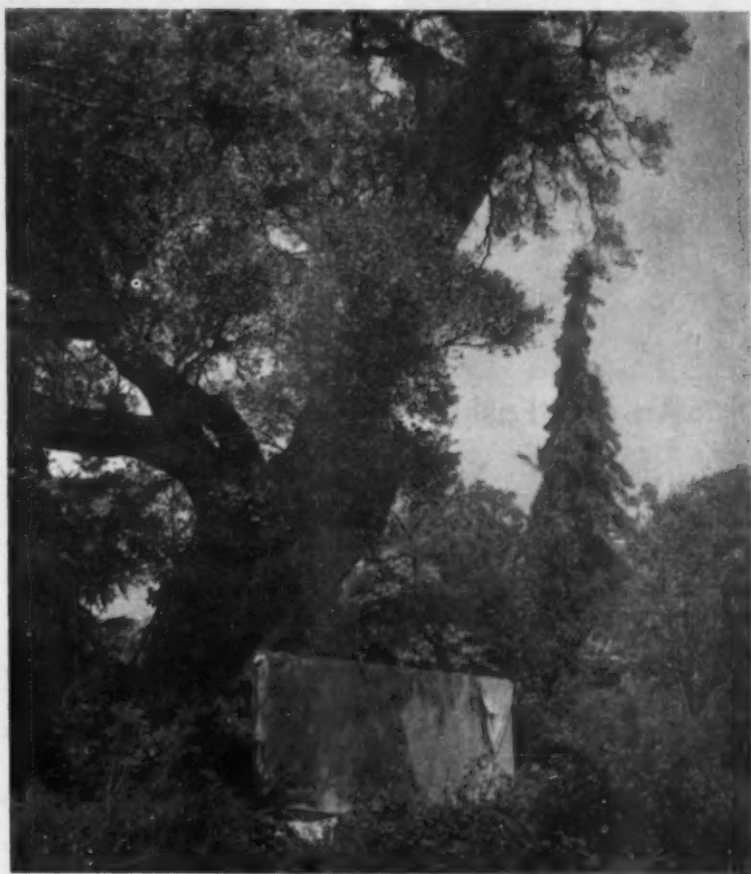
## The Perils of City Beekeeping

by Charles W. Park

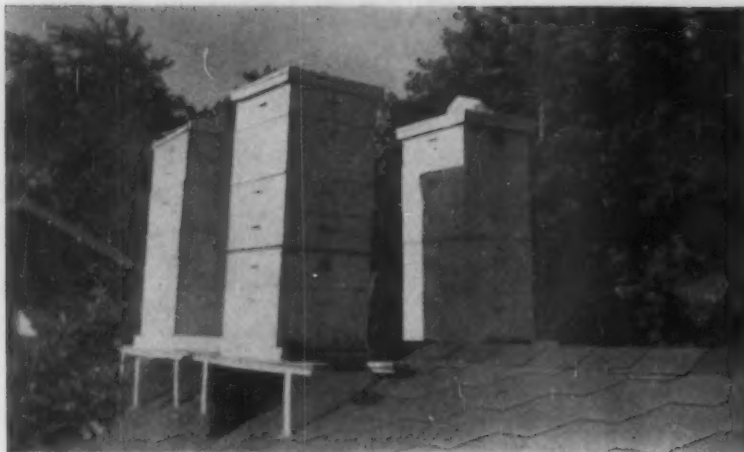
In September 1957, I received permission to place three colonies of bees on private property. The location was under a large oak tree, and on the bank of a creek. The area is surrounded by a seven foot cyclone fence with barbed wire on top and with a locked gate. The colonies are about twenty-five feet from the fence which parallels the sidewalk. In April 1958, the creek rose during a storm and the water came up to within a few feet of the stand. One evening in June a man called on the phone and said that he was going to spray the oak tree the next day and would like me to move the bees out of the way. This was asking a lot because the supers were on and we were in the middle of the honeyflow. I went over and placed entrance screens on and in addition, placed full screens on top. The next morning, I placed a ladder across the tops of all three colonies and then covered the whole with tarpaulins. The word spray was a misnomer as the man used a high pressure nozzle to reach the top of the seventy-five foot high tree. The liquid and worms came down in a rain. Later in the day when things had dried up, I removed the tarps and screens. In July, I noticed a lot of red dust out in the street. Investigation revealed the ground around the stand covered with pieces of red brick. It appears that teenagers had broken the bricks in the street, and then threw them over the fence at the colonies. In the picture, marks on the lower brood chambers show that they had scored a few hits. In August, I found a piece of lace curtain on the ground behind the colonies, and one of the covers askew. Someone had taken one shallow frame of stained uncapped honey out. In September, during a high wind, a three inch branch broke from the tree and fell squarely on the colonies. No damage was done. Of interest is the method of supporting all three colonies on six spikes. These colonies were given Starlines in 1957 and the yield this year averaged 125 pounds per colony. California



These three colonies under the oak were supported on spikes. A neat lot of equipment, painted and sound. In September a three inch branch broke from the tree in a high wind and fell on the hives.



During spray applied to the oak, entrance screens were given colonies at night with full screens on top. A ladder was laid across the tops and the whole covered with a tarpaulin.



### Lueddecke's Roof-Top Bees in St. Louis

These two pictures have been made for some time, ready to use. Now the "Swing" is working, here we go with apologies to Mr. Lueddecke. Some of Mr. Lueddecke's bees are on this roof above a thirty foot lot in the heart of south St. Louis. He had to keep the bees out of the line of flight to avoid bothering people and neighbors. So up he went. They are on a garage roof and have been there for many years. A neighbor's wife was stung once during that time. They average a hundred pounds of honey each, year after year, as the picture indicates. It was taken early in August. About 90% of the honey is from white clover growing in lawns. After extracting, the bees usually put up seventy-five pounds or more of darker honey for winter stores. Mr. Lueddecke is prominent in the Eastern Missouri Beekeepers' Association and has been president.

## An Old Fashioned Cough Remedy

D. C. Jarvis, M.D.

If you are troubled by a cough make and use the following cough remedy, which is a very old one here in Vermont. It works today just as it has all these many years.

Boil one lemon slowly for ten minutes. This boiling softens the lemon so that more juice is gotten out of it and also softens the rind of the lemon.

After boiling cut the lemon in two and remove the lemon juice by pressing each half over a lemon squeezer. Empty this lemon juice into an ordinary drinking glass. Now add two tablespoonfuls of glycerine which you purchase at the drug store. Two tablespoonfuls of glycerine equal one ounce in terms of the drug store way of measuring.

After adding the two tablespoonfuls of glycerine stir up well and then fill up the drinking glass with honey. A small bottle of honey purchased at the grocery store will generally fill up the drinking glass.

After stirring well pour into a small jar or bottle with a large opening to be kept until used. Stir with spoon before using. The cost of preparing this cough mixture is small.

The dose of this cough syrup is regulated according to your needs. If you have a coughing spell during the day take one teaspoonful as it will help to lessen the duration of the attack of coughing.

If you are apt to be awakened at night by an attack of coughing take

one teaspoonful of this cough syrup at bedtime and again during the night if you have a coughing attack. If your cough is severe take one teaspoonful on rising, after breakfast, the middle of the forenoon, after dinner, the middle of the afternoon and after supper and at bedtime.

As the cough gets better lessen the number of times in the day you take this old fashioned cough syrup. This represents the best cough syrup I know of. It will relieve a cough when all other cough syrups fail. It does not upset the stomach like many other cough syrups do. It can be taken by children as well as adults. Barre, Vermont

### MORE ABOUT BUSHY POLYGONUM

by Roscoe E. Johnson

We have worked with bushy polygonum for several years to determine its value as a bee pasture plant. The species usually found as an ornamental planting is *Polygonum sachalinense* or Chinese Bamboo (not *P. cuspidatum*, the Japanese knotweed). The bamboo is a much larger, more spreading and longer lived plant.

Once established, it needs no more care and it spreads in proportion to the soil fertility and moisture available. I have found it growing in dry stone piles or at the edge of a brook under decidedly moist conditions. The spread seems to be related to the moisture.

It is an excellent bee plant, blooming for a period of from one to three weeks in August and September. We have isolated three types, early, mid-season and late blooming, with enough overlap so, with plantings of each type, continuous bloom may be expected, under our conditions, from about August 5th to September 15th, barring frost. The late blooming type should be established on site free from early frosts.

The Horton Nurseries, Plainville, Ohio, have this plant but they deal only with the wholesale trade, so beekeepers will have to order plants through their local nurserymen. Here is a fine chance for a state or local association to produce two-year transplants at cost for members. We believe collected roots should be dug dormant or when growth first starts and be cared for in a garden for at least a year to produce a strong root system before transplanting to a permanent location. Barre, Mass.

## Accent On Progress

by Keith Hudson

In the beginning of my hobby beekeeping, the desire for numbers of colonies surpassed the desire for quality. It seems that this is a common trait of beginners. One story colonies and a reluctance to kill old queens were a part of my trials and errors. Any units above the single story were considered to be supers, so the bees were half starved in spring and actually built up on the clover, storing their surplus in the fall. It is an old story, told many times, but still being done.

It soon became apparent that prolific queens were being dealt a great injustice. So I cut the number of colonies in half by making them doubles. It is a thrilling sight to see the queens laying in the upper stories and to note the growth of the colonies and the increase in their honey-storing ability.

With the accent now on colony strength came the consideration of entrances and ventilation. Finally the auger bit was used on the second story and the result again made it apparent that the men who keep bees as a profession know what they are talking about. When pollen became abundant and colony strength increased, I noted that there was a mad scramble to gain entrance to the hive through the upper flight hole. But, in the rush of heavy flight periods, pollen would be lost and would be lying in front of the hive. A 3 x 4 inch piece of masonite board was secured with a staple right under the flight hole to provide a landing and then there was little loss of pollen. The bees readily accepted and used it.

Nebraska



### Real's Prize Float

This float was entered by the Taber (Alberta) Beekeepers and won first prize in the Taber Rodeo. It was designed and sponsored by the Alberta Beekeepers' Association and was made available to any local association in the province. The components of the float include an animated stream of bees which fly from the huge clump of blossoms, measuring over six feet high, into the Honey Castle carrying with each a bucket of their sweet prize. A timekeeper bee perched on the top of the castle checks off in her little book the name of each worker and the amount of her load.

Mrs. Steve Real  
Taber, Alberta

## Special Handling of Package Bees

by Raymond H. Irwin

April, 1958, I received 4, 3 lb. packages of Italian bees from State Line, Mississippi, and a friend of mine, W. D. Marrs, the day before, received 2, 3 lb. packages of Midnites from Navasota, Texas.

The packages were nailed together with the usual slats and the postal employees stood them on end with the screen sides flat and the cans of syrup on the sides instead of hanging with nail holes downward.

This causes the syrup to run out on the bees. There is a label on top which reads: "This Side Up" but

the employees never notice it because it is printed in black instead of in red ink. It would be better still to have a caution sign with the reason pasted on top.

We are charged for a special handling stamp on package bees so we should get special handling. The poor bees do not enjoy being stuck up with sugar syrup. So if the package shipper will stress this with caution labels I am sure the postal authorities will cooperate.

Oklahoma

### Editorial

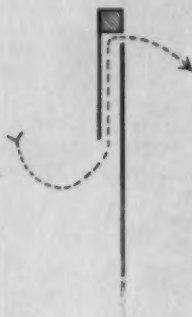
#### SHOULDER TO THE WHEEL

Likely, when you read this, you will have been to the meetings at Tampa and returned. But now there is no way to guess what may be done there for the honey market. We read every day of the dilemma of those in Washington over agriculture and there is the ever present suspicion that honey may take a back seat and get scant attention. Maybe it is up to us anyway to put our own shoulder to the wheel and tackle our own marketing problems. We can do it. We just don't want to do it. The Federation can stand forever as our stalwart group if it just keeps honey moving at a good price. But without the help of all of us maybe such a huge job cannot be done.



# Have You Tried This?

## A Simple Bee-Escape Screen for the Honey House



Leave window screen untacked at top of frame, so there is a bee-width gap across whole top; put this to outside. On inside of frame, tack a four or five inch strip of screen along top of frame; this will be open at bottom, and separated from outside screen by width of frame. Takes only a few minutes to fix, gets rid of all bees in no time. No bee ever comes in, because bees always move upwards on screen until they find a hole. Gets rid of flies, too.

Richard Taylor  
Rhode Island

## Hive Stands for Free

A hive stand should keep the bottom board off the ground to prevent rotting. However the stand often forces returning field bees to drop into grass instead of alighting at the entrance. A stand of lumber is often several inches high. The cost of such a stand is a consideration also.

A better plan is to use four flat stones, one at each corner of the hive. Use a shovel and set each stone so as to make the bottom board rest level. Even better "pave" a place about four feet square with flat stones. This gives ample room for two hives and grass and weeds cannot grow to clog the entrance. Flat stones can be had for the work of picking them up. A good test is that a hive heavy with honey and set on flat rocks stands solid and will not upset. A hive on a stand of lumber often leans when heavily supered and may fall over.

Julius Lysne  
Wisconsin

## Aluminum Foil to Prevent Melting

Here in Oklahoma where I live I have bees some of which I bought right in the hives. I did not get them in time to paint the hives so, during the 100 plus temperature we had last summer, the honey on the west side of the hives melted. To stop this I used some heavy aluminum foil designed for locker purposes and, with masking tape, I fastened this on the hives. It is an easy and quick plan to stop melting since the aluminum will deflect the heat.

Tom Price  
Fox, Oklahoma.

## How to Calm Mad Bees with Tobacco Smoke

At times when bees become excited and seemingly no amount of smoke will calm them, try sprinkling tobacco on top of the coals of your regular smoker fuel. This can also help when there is danger of robbing starting. Tobacco smoke should be used sparingly because it is much stronger than smoke from most fuels and too much will have the same effects as none at all.

Anton J. Nachbaur, Jr.  
Salinas, Cal.

## An Extractor Holder

The only place I have to extract the honey from my fifteen colonies is the cellar of my house. Since I do not want the extractor to take up room in the cellar all year long I move it and store it in a corner.

A quick way to set up the extractor is to cut three holes in the cement floor. The holes are about 120 degrees apart and about 2½ feet from the place where the extractor is to be located. Into the holes I put a large nut and then cement all around each nut making sure to leave the hole in the nut open. I place the extractor on a sturdy wooden box that is high enough so a bucket will fit under the honey gate. One end of the rods and turnbuckles are screwed into the nuts on the floor and the other end fits over the rim of the extractor. By this means the extractor can be set up and taken down in a few minutes.

Robert Schmieder  
Pennsylvania

# HINTS For Hive Assembly

by Joe Robbins

I would like to give a few hints for more efficient beehive assemblage.

I know that most beekeepers are a little reluctant to buy new hives, but when they do they want them to last a long time and be easy to assemble.

Here are a few suggestions as to how the life of the hives can be prolonged and how the hives can be put together the easiest way.

First, the sides can be nailed together with little trouble, but remember to have the ridge which is on the head of the nail crossways or parallel to the grain of the wood and the nail perpendicular to the board before you drive the nail in. This will prevent the wood from splitting and keep the nail from coming out the side of the wood. Incidentally, when nailing the hive together, you can save a lot of time spent reaching for another nail if you put a handful of nails in the hand hold of the hive while you are nailing that side together and you won't have to reach for another nail somewhere else farther away.

Glue which will dry in about twenty minutes is ideal to use in gluing the sides of the hives together. Glue is stronger than nails and will not come apart or work its way out like nails will. It can be applied with an old toothbrush more easily than with your finger.

When the inner covers are put together, thick cardboard can be used on your work table to provide something to receive the nails when they are hammered through the cleats and inner cover boards. The best way to clench the ends of the nails is to turn the inner cover over and set it on top of a smooth steel table or a piece of steel plating; then hammer them down against the grain. This will prevent loose cleats and split boards. Even better yet you can glue the cleats on, but nail them anyhow to hold the cover together while the glue dries. As a finishing touch the inner covers should be varnished and sanded afterwards so mildew and mold will not collect on them while they are being stored.

Frames should be glued together also so that they will not have to be re-nailed in the future, but don't forget to put the nails in to hold them while the glue dries.

Using the methods mentioned above



for hive assemblage may take a little longer than the simpler ways do, but will prove their value by prolonging the life of your hives and preventing unnecessary repairs.  
Tennessee

## Hive Painting

by S. S. Miner

I have been painting the whole interior of hive bodies and supers with aluminum paint for a number of years whenever I overhaul equipment. About a third of my equipment is now painted. The outside is painted with white house paint.

The bees seem to propolize the inside-painted bodies and supers less, apparently being satisfied with the sealing job done by the paint. The bees go more readily into a super, coated with aluminum, and they fill out and cap the outer combs better. This is especially advantageous in producing chunk comb honey.

A special value of aluminum paint inside the hives lies, I believe, in its heat reflecting properties due to the millions of aluminum flakes suspended in the paint medium. Thus the warmth of the winter cluster will not escape so readily through the walls of the hive. I have found brood right next to the side walls also in hives so painted.

I am going to try some hives treated inside as Mr. Osborn relates (see January) for comparison with aluminum painted ones. I believe the preservative would be a good thing anyway for anything that stands out in the weather as a beehive does.

I have carried this aluminum painting idea further. I use a metal and wood cover of my own design. It consists of a sandwich of galvanized steel, heavy corrugated cardboard, and  $\frac{3}{4}$  inch T & G cedar. All surfaces of all components, except the top of the metal, are painted prior to assembly with aluminum paint. I have wintered bees under this cover for several years without loss and I prefer it for its economy and ease of handling.

It seems to me that this subject of hive painting could be profitably studied by someone equipped to make heat transmission determinations. Such a study might be of considerable value to beekeepers. If it could be shown that reflective coatings would encourage an earlier expansion of the brood pattern this might in many places represent the difference between profit and loss.  
Michigan

## Filled Up



Before State Fair, I removed the crop and added a comb super for cotton for each hive. When I got back, look what I found; filled and storing outside.  
H. E. Dale, Herrin, Illinois

## Disease Spread



Colony, dead of AFB, in Yankton, N. C., being robbed out. Photo by W. A. Stephen, State College, Raleigh. Well - who get's it next?



## Beehive Cake

2 cups sifted cake flour;  $1\frac{1}{2}$  teaspoons soda;  $\frac{1}{2}$  teaspoon salt;  $\frac{1}{2}$  cup shortening;  $1\frac{1}{4}$  cups Honey; 2 eggs, unbeaten; 3 squares unsweetened chocolate, melted; Water\*; 1 teaspoon vanilla.

\*With vegetable shortening, use  $\frac{3}{4}$  cup water. With butter or margarine, use  $\frac{5}{8}$  cup water.

Sift flour once, measure, add soda and salt, and sift together three times. Cream shortening, add Honey very gradually, by tablespoons at first, beating very hard after each addition to keep mixture thick. Add one-fourth of the flour and beat until smooth and well blended. Add eggs, one at a time, beating well after each. Add chocolate and blend. Add remaining flour in thirds, alternately with water, beating very well after each addition. Add vanilla; blend. Pour batter into three 8-inch layer pans which have been lined on the bottoms with paper, and one 10-ounce custard cup which has been greased and floured. Bake in a moderate oven ( $350^{\circ}\text{F.}$ ) 25 minutes or until done. Cool. Prepare recipe for Mocha Creole Frosting.

To Make the Beehive: Cut the 8-inch layers to make 7-inch, 6-inch, and  $5\frac{1}{2}$  inch layers. Cover top of 7-inch layer with mocha creole frosting. Place 6-inch layer on this and spread with frosting. Repeat with  $5\frac{1}{2}$ -inch layer and custard-cup-layer. Spread frosting over sides to give a rounded effect. Draw ridges around sides with spatula to resemble a beehive.

## Mocha Creole Frosting

$\frac{1}{2}$  cup butter or other shortening; 6 cups sifted confectioners' sugar;  $\frac{3}{4}$  teaspoon vanilla;  $\frac{1}{4}$  teaspoon salt; 3 squares unsweetened chocolate, melted;  $\frac{1}{2}$  cup (about) strong quality coffee.

Cream butter and add part of sugar gradually, blending after each addition. Add vanilla, salt, and chocolate, and mix well. Add remaining sugar, alternately with coffee, until of right consistency to spread. Beat after each addition until smooth. Makes  $3\frac{1}{2}$  cups frosting.  
American Honey Institute



# Commercial



## Let's Finish Laughing Gas

PART TWO OF A TWO-PART ARTICLE

by Lee R. Stewart

*In the first part of this article in January, the last paragraph on page 11 left the finish, of the use of nitrate for transferring, hanging in mid air, so to state, so that paragraph is repeated here to keep the sequence.*

Did you ever transfer bees from a box hive or cross combs? Remember what a messy job it was and if no nectar was coming in you often started a vicious case of robbing. With laughing gas you can do the job quickly with no mess or robbing. Just set your box hive or cross combs to one side and in the place put your new hive with a few drawn combs if available. Then remove bottom board from box hive and set it (hive) on top of the new hive. Next with prepared smoker, you gently smoke tops of cross combs, giving just enough of the gas to make bees run freely and not enough to make them groggy or put them to sleep, for if you do they will not be able to move and you will have defeated your purpose. Take pains to apply smoke around sides, ends and corners. In a few seconds all the bees will be in the bottom hive.

If you want to save the brood place a queen excluder between the two hives; if they don't fit, close the cracks with small strips of board. In ten days or so remove any queen cells that might have been built in the cross combs. In 21 days all the brood will be emerged in the cross comb box and you can remove it, gassing the bees down or shaking them off combs. In case you are not particular about leaving these bees with the new colony you can set the box hive on new stand at time of transferring and in 21 days start a nucleus with the emerged bees. More than likely they will have a virgin queen.

Laughing gas is a boon to those who will practice shaking in the treatment of A.F.B. You follow the



same procedure as you do with cross combs except you use full sheets of foundation in the clean hive in the place of drawn combs. You can use one drawn comb (a cull will do) and replace it with a comb of foundation in 24 hours. Avoid jars or rough handling that might cause bees in the diseased colony to gorge themselves with honey. After the diseased hive is placed gently over the clean hive drive bees down with your gas, remove hive, burn diseased combs in fire prepared beforehand and flash fire with gasoline the bottom board, cover and inside of hive body. The job can be done quickly and cleanly with no spilled honey, mashed bees, or robbers.

We have also found laughing gas useful in removing bees from houses, a job usually trying where there are several openings. Remove board near brood nest and one near sill below, in case it can't be reached from the hole above. When there is little or no flight put bees soundly to sleep. Next remove comb and bees you can reach, and place them in a tight bushel basket (which will usually

hold them) with sticks between combs for spacers. After all comb is removed scoop up bees that have fallen below and place them also in basket. If some of the bees begin to show life before you are through give them some more gas; as a rule they will remain quiet about 30 minutes, depending upon outside atmospheric conditions. The basket of bees can be united to some other colony or you can establish a new one with it by placing them in an empty hive body over one with combs or foundation. As soon as they are established, in a day or two, put the queen below an excluder and as soon as all brood is hatched, gas bees down and remove old combs.

When bees are put to sleep with laughing gas they more or less lose their sense of location, depending upon how well the job is done. This factor is very useful in preventing their return to the old stand when bees are moved short distances. We have also used gas successfully on longer moves without closing entrances. We have no data on distance one gassing will take you but we do know it will be effective 40 or 50 miles, depending upon your driving speed. In case bees show activity before you reach your destination you can give them more gas, but to do so hives would have to be loaded so that their entrances are accessible.

The use of laughing gas makes uniting simple and easy with no fighting or loss of bees. In each yard we operate a number of standard, five frame nuclei. If some colony is below par at beginning of honeyflow we gas it moderately at entrance and shake a frame or so of bees from some nucleus that can spare them at hive's entrance, being careful not to get nucleus' queen. As the bees in the parent colony are always the killers, a protective instinct, gassing soothes this desire

It takes some time to put new ideas into action. This issue will first show what the idea of the Swing means. We need your help. Any of you COMMERCIAL boys who have plans, methods, equipment, ways of doing things that might help other beekeepers in commercial operation can perform a real service by telling how you do or what you use. Write a letter and name your way. Then we will ask you some questions about it and, after a number of sessions of questions and answers by correspondence, we will turn out something together that we can be proud of. But don't just read this and say: "By golly, I'll do just that." DO IT.

to kill and when they regain their normal condition they will not know (?) but what the shaken bees have always been a part of them. If colony needs brood as well as bees we remove an empty comb or two from it, gas the bees and fill empty space with combs of brood and bees from nucleus.

Brood added to a weak colony at time of honeyflow is detrimental unless the flow is a long one. If you want to unite two colonies gas and double them up. If both are queenright put the colony that has the poorer one to sleep and set the other on top. This type of uniting has these advantages over the newspaper method: there is no danger of smothering; the union is quicker, and you do not have to kill poorer queen.

Probably no place in beekeeping is laughing gas more useful than in requeening. We don't know all we can do along this line but there are some things we do know. Any requeening with gas should be done when there is little or no flight. Even in a light flight the entrance should be screened for thirty minutes or so in order to eliminate ungassed bees. We have already told how to replace a poor queen in the paragraph on uniting, where the ungassed queen searches out the one gassed and easily kills her. With the same procedure we have reason to believe a gassed queenright colony will accept a new queen released on top bars; we know a queenless colony will accept a new queen in this manner, and it's the only way we know of to successfully requeen a colony with laying workers. A gassed queenless colony will also accept a brood frame with bees and queen and we think a gassed queenright colony will do the same. In any of these operations all the bees in

colony to be requeened must be put to sleep and in any method of requeening a "fat" or laying queen is always best.

Many methods and gadgets have been used in removing honey but each has some drawback. In modern times the bee escape has been widely used but it takes twenty-four hours or more to clear supers, which means an expensive return trip for the honey. If weather is cool or there is unsealed honey in super, bees are reluctant to leave, and if there is a small patch of brood in super the bees will never leave it. You also sometimes trap the queen above the escape and find her in the honey house with no idea of the colony you have dequeened. Moreover if there should be a crack big enough for a single bee in the equipment above the escape you may find empty supers when you return for the honey.

Carbolic acid is also widely used but as it needs heat to generate fumes it is useless on cool, cloudy days. It also requires extra equipment. But the biggest objection to its use, at least as far as we are concerned, is dangerous possibilities. We have been told on good authority carbolic burns may develop cancer years afterwards. There is also the danger of using too much and tainting the honey.

With laughing gas you don't have any of these difficulties in removing honey. You can go to an outyard any day warm enough for bees to crawl and bring your honey home with you. It is ideal for shady, cool spots, places in which other methods would be useless. The cartridge Sanders devised is ideal for this purpose; it lasts much longer and emits a steady, fine stream of gas. With prepared smoker you smoke entrance just enough to drive

guards away, remove cover and apply smoke over top of frames, around the sides, in the corners and at ends. Don't gas them too heavily, just enough to make them run freely. You can operate two or three colonies at a time and one man can remove supers faster than two men can truck them. The gas is a deterrent to robbing and if you are merely removing honey you will have a load before the bees discover what you are doing.

In closing I might add the statement, "the bees worked like fury upon awakening," was a misunderstanding. What really happens is this: upon awakening they don't know where they are, or why, become excited and begin rushing and flying about which gives the casual observer the impression they are vigorously working. It's a natural reaction equally true in humans.

As before stated the element of human error is an important factor in any project. Most failures can be traced to such errors. Dr. Eckert reports losing some brood, due, no doubt, to the fact bees being asleep they were unable to protect brood either from excessive heat or cold. Only the young, unsealed brood died. Also larvae a day or so old could possibly starve as they have not as yet received enough food to tide them over any length of time. Older larvae with their abundance of food would be in no danger of starving. To our knowledge we have never lost any brood.

It's not often that bees need to be put to sleep. Never do so when robbers are in circulation unless you close entrances, as the sleeping bees will not be able to protect themselves. If you gas in cold weather they may freeze in their sleep.

Newport, Indiana

## EDITORIAL

### Disease Control and Expansion

One of the biggest factors in the possibility of expansion in commercial beekeeping now is the use of drugs and antibiotics to control bee diseases. Once American foulbrood, for example, demanded 25% of the management cost each year and the job of colony management was much slower and more costly than it is today. The prevention of disease and the reduction in losses has made it possible to enlarge commercial outfits and to institute management that is much more efficient and less time consuming than in former disease-ridden days.



## A Royal Jelly Specialist In Australia



Rex Peacock, Australia, and his royal jelly exhibit.

Rex Peacock, Victoria, Australia, is Australia's first producer and exporter of royal jelly. No longer able to produce enough jelly from his own outfit he has established contacts with beekeepers who produce jelly for him. These supplies are deep frozen and flown in by air express.

One of the two pictures shows him and his royal jelly stand at the Honey Week Display of the Victorian Apiarists Association at Melbourne last May. He sold over \$1000 worth of royal jelly in capsules and

jelly mixed with honey during this time.

The other product picture shows his filter set-up. "A vacuum pump is connected to the side by an inlet hose to create a vacuum in the flask. A funnel with an air tight rubber stopper around the stem goes in the top inlet and a filter pad fits on the inside of the funnel. The vacuum in the flask causes the jelly to go through and this filters out the impurities. I use an electrically driven pump but one operating from a water tap may be used. The electric job is more powerful, giving a vacuum



Jelly filter, capsules, and products, with descriptive booklet.

of 28 compared with 15 in the water operated type. The pump is also part of the equipment I use for drying the jelly so I can pack it into the gelatin capsules. Any moisture reacts against the capsules and they break down.

"Our laws are like yours. Royal jelly is sold as a food and not as a medicine and it is not generally recognized by the medical profession. I am very pleased to note that a foundation for research has been formed in your country and I wish them every success in their efforts."

## Acclimatization of the Honey Bee

by Julius Lysne

The term "acclimatization" is used by biologists to mean a process by which animals and plants become adapted to live in a climate to which they are not native. Some animals and plants have this faculty and some do not. The reindeer cannot adjust itself to live in a temperate climate where there is plenty of pasture. It degenerates and dies. On the other hand it thrives in the frigid north. The horse, however, is a native of Asia, yet it has adapted itself well to life here in the United States. Also the tea plant, a native of China, grows well in our country.

There are two theories about acclimatization. Some hold that an animal or plant, native to a tropical or semi-tropical climate, may, by slow stages, be brought farther and farther north and the ability to endure a colder climate will be acquired. The gain for each generation may be small but after several hundred gener-

ations it will add up to a marked difference.

The other theory is that the ability to endure cold cannot be gradually acquired but that such plants and animals which have the ability to survive a much colder climate are known when the experiment of acclimatization begins.

Biologists now say that many animals in the wild are moving northward. They are doing this without the aid of man. A good example is the opossum. At one time Illinois was about as far north as the opossum could be found, but now it has moved well up into central Wisconsin and is thriving well.

At one time the best authorities insisted that the diamondback rattlesnake could not survive the Wisconsin winter. In 1920 a traveling show near this part of Wisconsin released through accident some diamondback rattlers. They survived the winter

and increased along the Mississippi River and are still here although this snake is supposed to require a mild climate like Arizona.

In pioneer days bee masters insisted that beekeeping could not be carried on in Minnesota or Wisconsin because the bees would be sure to winterkill that far north. Practical experience soon proved however that bees could go through winter that far north although cellar wintering was used by practically all beekeepers.

At that time success in beekeeping was based on swarming and an apiary with 100 colonies in spring would have about 300 in fall. Sulphur was used to kill about two-thirds of the colonies and then honey cut out of the frames. Most beekeepers used box hives although a few had hives with movable frames. Even forty years ago beekeepers in this part of Wisconsin followed this practice, often



keeping the bees in ten-frame hives and allowing each colony only one body. One inch starters were used in the frames.

Under such a plan swarms often escaped to the woods and the first settlers noted that they lived through winter and that they would cast a large swarm early in the season. Pioneers with a box apiary of a dozen swarms, in the rush of other work, would leave their bees out-of-doors where they would be snowed under for almost four months of the year. The result was good wintering and lots of early swarms.

Whether or not bees acquired hardiness as they came farther north is not known but the evidence would tend to show that bees have an inborn ability to adjust to extremes of temperature. Consider the Italian

from the mild climate of southern Europe. This far north there is no evidence that they know that winter is coming. The queen will have her brood nest high up in the hive if no excluder is used. So, with Italians, it is good practice at the beginning of the main flow to confine the queen to the lower body so the food chamber will be solid with honey for winter.

With Caucasians, things are different and no excluder need be used. This race is native to the Caucasus Mountains of southern Russia which are 10,000 to 18,000 feet above sea level and the winter climate is severe. They make early preparations for winter and place plenty of honey in the food chamber and the queen has her brood nest below. The darker races also may get more heat from the sun in winter than the yellow races

and they are more apt to take cleansing flights in winter.

We hear of bees in the mountains of Vermont that have been there for about 300 years and are descended from the Dutch bees brought in by the first settlers. They are said to winter well, to be good workers and fairly gentle. Bees in the deep South that have descended from the Dutch bees however are said to be cross and rather poor producers.

Perhaps changes do take place in a period of hundreds of years by the process of acclimatization. At any rate all this gives us something to think about when we consider the type of bee we want to keep. The hybrids are a big step forward because they combine the good points of several strains.

Stockholm  
Wisconsin

## Items of Interest--

### Seed Crop Production in 1958

U.S.D.A. annual summary of seed crops for 1958 in the U.S.A. would indicate that the total acreage in 1958 of the legumes including the clovers, lespedeza and vetch, were almost identical with 1957, namely in the neighborhood of 3 million acres. Increasing in acreage were ladino, red clover, lespedeza, crimson clover and vetch, while Dutch white, alsike, and alfalfa decreased. The price of all these seeds was de-

cidedly higher in 1958 than in 1957.

### Canadian Imports

According to the Canadian Bee Journal (Sept.-Oct.) there was imported into Canada during the first half of 1958 in excess of two million pounds of honey, of which all but some 20,000 pounds came from the U.S.A. There was also imported some 100,000 pounds of beeswax, as Canada is an importer as well as

U. S. 139,551 packages of bees went across the border into the Canadian provinces from breeders in the States.

### G. H. Merrill of South Carolina

Our readers will regret to learn of the death of one of South Carolina's best known beekeepers, Mr. G. H. Merrill of Greenville. Mr. Merrill's earlier beekeeping years were spent as a queen breeder with the late D. D. Stover in Mississippi.



Prost's 170 Kinds of Honey

"Fancy Food News" in the Progressive Grocer for October reports on the "Fancy Food Show" featuring exotic foods of all sorts. Our good friend, Andre Prost, Queens Boulevard, Woodside, N.Y., has a picture of his exhibit with more than 170 varieties of domestic and imported honeys, besides other products he handles. It was a most unusual exhibit.



Commercial Yard in England

This is a yard of A. W. Gale's, Marlborough, England. He is a large commercial beekeeper although over here we think of English beekeepers as being small. He also handles honey on a wholesale and export basis. This yard, between a woven fence and a line of trees should be well protected. Apparently he uses lids of half depth. This is a good view of the countryside.

# WHAT THE BEGINNER WANTS TO KNOW

*\*Question from*

**Ferdinand Goff**

**Pennsylvania**

► Here are three questions which I would like to see answered in your department:

- 1) I am planning to move my bee-hives 25 feet from the present location. Is there any danger of losing some bees if the transfer is made during the winter?
- 2) My hives are all set in a straight line. If a swarm from one of these hives is caught and hived in the same line with the other hives, would the field bees return to the original hive?
- 3) After extracting the honey, I set the combs outside so the bees can reclaim the honey left in them. I noticed a great number of bees dead after this cleaning job, near the combs. Am I wrong in letting the bees do this cleaning operation?

*Answer:*

- 1) I am sure you will find the bees will drift back to the old location if they are moved a short distance. The time of moving will make little difference to the old bees, even in the winter. Once a bee has orientated itself to a location, it will return to that location on its first flight. Bees seem to have a fairly long memory. In England, it has been observed that bees which have

lived through the winter remember locations from the year before.

- 2) If you return a swarm to the same line as the parent colony, some bees may drift back to the original stand. I think a better practice would be to place the swarm on the stand of the parent hive, in order to catch more field bees. The original colony is then allowed to rear a queen. When she starts to lay, the colony may be united with the swarm. Place the colony with the queen on top of the swarm with a sheet of paper between.
- 3) I think you were right in getting the bees to clean out the combs. Your method may not be best, since it has the disadvantage of losing a few bees and some danger of the combs being chewed. There is also the possibility of spreading disease. I believe it would be better to place the supers on a colony over an inner cover to allow one colony to clean several supers at one time. I like to store the combs dry.

*\*Question from*

**P. C. Witherell**  
**Massachusetts**

► Last summer, when I was trying to requeen one of my colonies, I killed the old queen, and inserted a new queen in the mailing cage between two frames (attendant bees removed). There was some brood in the hive at the time of introduction. One week later, the queen had been released from the cage, but I didn't inspect the hive, fearing that the bees would ball and kill her. Two weeks after introduction, I gave the hive an inspection, to find that there were 8 queens, 3 of which were dead on the bottom board, and several unhatched queen cells. Why didn't

the bees accept the queen I was trying to introduce? What method of queen introduction do you recommend?

*Answer:*

I do not know of anything that I would have done differently in requeening your colony if it were a normal colony as you indicated.

Why queens are not accepted is always a mystery and sometimes this may be for the best, because there may have been something wrong with the queen you were introducing; at least this is a happy way to look at the problem. If she were a nervous queen or damaged in any way, it is not likely they will accept her under any condition.

Here are a few factors which may affect acceptance of queens:

1. The condition of the new queen. The bees will accept a laying queen almost any time. She must be healthy and quiet.
  2. The condition of the colony, whether or not there is food and brood; feed if no honeyflow.
  3. Queen cells present: Often small cells have already been started and if this is the case, the queen certainly will not be accepted. Remove them all.
  4. Presence of the old queen. She must be removed before introducing the new queens.
  5. Disturbing the hive; whether by skunks, mice, or humans.
  6. It seems to help to remove the attendant bees from the mailing cage so the queen is hungry.
- One of the safest ways to introduce a queen is in a nuc or division. Once she is accepted in the nuc (and they almost always are) and she has begun to lay, she may be united with the colony which is to be requeened. Bees will almost always accept a laying queen.

**Edited by**

**W. W. CLARKE, Jr.**

**Pennsylvania State University**



## **The Education Of A Beginner:**

### **Feed and Feeding**

**by Edward L. Jones**

The beginner must choose from the various types of feed, methods of feeding, and the best time to feed to secure optimum results for his locality.

Some of my earlier difficulties which could have been eliminated by opportune feeding were due to my inability to estimate the strength of the

colonies and to little knowledge of the kind of bloom at any given time during spring, summer, and fall. I did not know which flowers were important, how long they could be expected to produce, the quantity required just to sustain the bees or furnish surplus.

In the desert foothill region of Arizona, bees can fly nine days out of ten. We seldom have three days in a row during the winter when they cannot fly. Spring build-up starts about February 1st and the honeyflow is from April 1st through June 15th. The weather starts getting hot about June 1st, up to 110° F., and the bees fly very little in the middle of the day. There is little nectar until about Sep. 15th when we may have a small flow through October. During this dearth the bees only consume stores. All this was learned after my unhappy experience with the bee trees.

One summer I cut seven bee trees. This is hard work. Aside from a dubious amount of honey obtained, it is much easier and cheaper to buy package bees or divide. But it furnishes a hobbyist with recreation in large quantities. All went well with cutting and transferring the bees from my first tree on June 6th. Little did I know the honeyflow was about over. I left the hive by the tree until the colony should become established. One week later I checked, and the bees were doing fine. When I came back in another week the bees were gone.

During the next two months, I cut and transferred four more trees. In each case the bees were gone two days later. Transferring had started robbing and, with no nectar coming in, the colonies all absconded. In September two more trees were cut. Both colonies stayed and were shortly moved to my apiary, and were fed the honey which had been removed from the trees. The queen of one had been injured and I had to give the colony a frame of eggs from which they reared a new queen. Although these hives were working well, I overestimated the fall flow and fed them very little when they should have been fed heavily to induce them to build up enough to winter over. They were not fed enough during the winter, and as a result, the colony which had reared a new queen was very weak in the spring and was robbed out. The other colony had a sufficient number of bees in the spring, but no queen. At that time the earliest date that I knew I could obtain a queen from a breeder was March 15th. I fed the bees until then and introduced the queen when she came. Only about a pint of bees was left, and she led them off to the hills shortly after being released.

Now, I don't transfer during the dearth, and all nuclei, late swarms, and transferred bees are fed to induce them to build to full strength by fall and to store for winter. Nuclei must be of at least four frames during the summer dearth or they'll be robbed out.

One winter I tried dry sugar feeding on four of my hives. I didn't feel they had enough stores at the end of October, so I gave each about 6 lbs. of sugar on top of the inner cover. On February 5th I gave the yard an early check. Though the temperature was about 50° F. the weather was clear and sunny and the bees were bringing in pollen. Of the first three colonies that had been fed dry sugar, only one had come up and taken the sugar. No bees were flying at the fourth hive. I opened the hive and lifted out a frame. The bees fell off like popcorn. The sugar had not been taken and no honey was in the hive. Sadly I knocked the frames on the ground to shake all the bees out of the cells, thinking, "I will have to start all over with this colony." Half an hour later I came by and noticed a few of the bees were beginning to feebly move. They had been warmed by contact with the ground. I mixed some warm syrup and sprinkled it on the bees as they lay on the ground. In another half hour they had revived sufficiently to begin crawling toward the hive entrance. Then I saw the queen. How small she looked. I kept them fed with plenty of sirup, though it wasn't until three weeks later that brood was found to be present. The bees soon superseded this queen with no surplus being stored that year.

Now, I feed my colonies that need it a minimum amount from May 1st

on, in order not to cause a great amount of brood rearing in the dearth period, which would only consume stores. Later on, the feed rate may be picked up to build them up to storing strength by Sept. 15.

Colonies are fed with pails or jars inverted over the inner covers. In October I try to give them several 10-lb. feedings to fill the upper body of my two stories and part of the lower by the end of the month. I try to do it quickly in order not to stimulate excess brood rearing. Then the colonies are not disturbed until about Feb. 1st.

## Item of Interest

### An Amazing Case of Wintering Nucs

A nuc, used during the summer to hold and mate queens, was surplus when the season was suddenly over. There was no place to use the combs, and as the nuc was full of bees it was set at the end of a row of hives. This nuc was 3 deep combs in a four comb box. The queen was a Carniolan mated in early September.

In March, I inspected the apiary, expecting to find this one "friz up." But no, it was still there, full of bees, and eager to go. Gave them a full hive body of drawn comb, with a feed pail, and now they are my prize colony. They have three deep hive bodies of brood, in spite of borrowing from them from time to time, for boosting other colonies. I am using this queen for a breeder. The winter got down to 22 below zero, and stayed in that neighborhood for weeks at a time. How about that?

Ray Smith  
Oregon

## Science in the Bee Yard

(For the beginning of this article, turn ahead to page 63)

populations is reversed so the food chamber is on the bottom board and a second body of combs is added at the top. Soon the queen occupies this second body and then the lower body under it is removed to the side on its own bottom. The field bees will drift out to the parent and then a new queen is given to the set-off.

The two bodies then grow in bees until the flow has begun and then, in about a week, the two bodies are set back together and the food chamber returned to the top. Supers are

added as required. No attempt is made to search out either queen. The best one stays and at least eighty percent of the time it's the new queen.

This plan insures a larger crop most seasons. It requeens automatically and the cut in population at separation prevents swarming. Back it up with large winter colonies and well placed stores of honey and pollen and the great importance in the bee yard of Farrar's research is at once apparent.





# Industry.....

## Insecticide Sprays and The Beekeeper

by Charles Mraz

In the November issue there are several references made to spray programs and their effect on bees. There are many beekeepers not acquainted with spray poisoning and perhaps not interested in the problem; some have spray problems and don't know it, some have spray problems and know it but don't know what to do about it. We have been in the unfortunate position of having experience with spray poisoning for almost 30 years, from lead arsenate to heptachlor and it might be worth while to comment on the several references made in the Journal.

On page 428 under heading "The Commercial Beekeeper," the writer comments on beekeepers being for or against spraying. If there is any beekeepers that ever lit a smoker that is in favor of poison spraying, I'd like to know who he is. Then again he makes the comment that often the reported loss by spray poisoning is often claimed to be greater than it is, or complicated by losses from other causes. Such comments indicate a sad lack of experience in spray poisoning. Actually, far more bees are lost by spray poisoning that completely escape

detection by even the most experienced beekeeper.

On page 441 is a rather detailed experiment written by Joseph O. Moffett of aldrin spray in oil for grasshopper control. As stated, aldrin is extremely toxic to all forms of life, including man and animal and especially bees. The conclusion that loss of bees was not disastrous is based on the number of dead bees found on a square yard of cloth placed at the entrance of 4 hives in each of three yards. Oil solutions of insecticide are far more toxic than the dry material so that even only 2 oz. per acre kills bees. Further investigation of this experiment I believe would indicate that loss of bees was far greater than indicated in the article. If we consider the radius of bee flight as only  $\frac{1}{2}$  mile, the flight area would cover around 500,000 square yards. Only the dead bees on one square yard in front of one hive were counted. If we multiply that by the number of colonies of bees in a yard times 500,000, it would give a better indication of what the actual mortality could be. It wasn't actually that of course, for several reasons. With a highly toxic material like aldrin, the chances are that just as many bees are killed per square yard a thousand feet from the hive as at the hive entrance. It is well to remember that with many of the highly toxic insecticides most of the bees are killed in the field and very few get home. I have seen a yard where all the field bees in every hive were killed, more than half the bees in every hive, yet hardly a dead bee could be seen at the entrance. Though it was a warm sunny day in June with clover in blossom, not a bee was flying. Only young bees were found in the hives and no dead bees at the entrance. According to Mr. Moffett's method of measuring mortality with a square yard of cloth at the entrance, it would be zero. Actually the mortality was terrific, but one would have to hunt over thousands of square yards of heavy grass land to find them.



It is for this reason, many beekeepers suffer from spray poison losses and do not know it. During May and June in heavy brood rearing, a hive can easily lose 5 lbs. of bees without showing any evidence of any loss because of the way bees spread themselves in a hive evenly. The only way I know it is at all possible to detect spray poisoning that is not evident by lack of bees in the hive, is the size of the honey crop compared to bees a short distance away out of reach of the spray area. While this is almost indirect indication, as honey crops will vary even short distances, I have yet to hear of any better method to detect poison loss where bees are killed in the field by highly toxic sprays.

Why broad spectrum contact sprays are used for grasshopper control is hard to understand. Aldrin in oil used as a spray on alfalfa kills not only grasshoppers, but almost all insects, especially those beneficial predators and parasites of other far more harmful insect pests than grasshoppers. A bait control such as bran sweetened with molasses with a stomach poison is much more selective and usually kills only grasshoppers without harm to our beneficial insects.

If aldrin is used as a spray on alfalfa, one wonders what its effect will be on cattle that eat such contaminated hay. While 2 oz. of aldrin on an acre is not much, yet it must be remembered this type of spray poison usually has a long residual life and is not broken down easily. In the course of a season a cow may

Edited by

**Robert Banker**  
Cannon Falls, Minn.





eat from  $\frac{1}{4}$  to  $\frac{1}{2}$  acre of alfalfa and if this were sprayed with only 2 oz. per acre, such a cow would eat almost  $\frac{1}{2}$  to 1 oz. of aldrin. And to a cow this amount of aldrin can be toxic, as it is accumulative.

Such toxins can also be carried on to the milk in high concentration and what such milk fed to infants will do is another problem. All too often experimental work with these deadly chemicals is terribly short sighted and any farmer that uses them must remember all possible serious consequences. This can extend to poisoning the soil on which his crops grow to poisoning the consumer he feeds.

In some areas effort is being made

to control spittle bug with poison sprays. For hay crops, such control is unnecessary and can lead to serious consequences. On legume seed crops there may be some excuse to try and control spittle bug where it may reduce the seed crop. There is no reason why more simple and non-toxic methods cannot be used, if necessary. Those acquainted with spittle bugs, know the soft nymph protects itself with spittle. Anything that destroys this spittle will destroy the immature insect. One possible method to do this is with a detergent of the many kinds available today, such as anionic, cathionic and non-ionic types. These detergents reduce the surface tension of

water and might prevent the formation of the bubbles that form the spittle, leaving the insect unprotected from desiccation and its enemies. Many other safer methods are possible for insect control that will not destroy the ecosystem or the natural balance of insect life.

Some day, perhaps, when even those still blind to the dangers of broad spectrum contact poisons, to both the farmer and the consuming public, will see the folly of the rat-race they are getting into, then perhaps insect control will conform to natural laws of nature, instead of violating them and paying the penalty.

Vermont

### Harry J. Rodenberg, Sr.



Harry J. Rodenberg passed away of a coronary thrombosis Dec. 18, 1958 at his home in Wolf Point, Mont. He was born at Metropolis, Ill. Oct 10, 1892. After serving in the navy in World War I, he attended Michigan State College at East Lansing, Mich. He came to Billings, Mont. in 1921 and started working with bees, and took some training at Montana State College at Bozeman studying apiculture.

He married Edna Smith in 1922 and they made their home in Manhattan, Mont. He went into business with Chris Buitenhoff and operated Cloverdale Apiaries for many years. Later he and his son Harry Jr. owned and operated Rody's Honey Shop at Manhattan. In 1947 a beekeeping operation was started at Wolf Point, Mont. and in 1952 Harry Sr. moved to Wolf Point, and the Manhattan

operation was discontinued. He operated with his son Harry Jr. Honeyland Apiaries at Wolf Point, until his death.

He was active in many groups and served in many capacities in the Montana Beekeeping Association and also the National Federation for many years. Harry was known and loved by many.

Survivors are his wife Edna, one son Harry Jr. and his family of Wolf Point, Mont., and a daughter (Charlotte) Mrs. Perry McCahill and family of Denver, Colo.

### George Lotz

We regret to announce the death of Mr. George Lotz of Boyd, Wisconsin, which occurred in Eau Claire Hospital on December 21, at the age of 90.

Mr. Lotz together with his father, started the Aug. Lotz Co. in 1897, producing at first a few hives and sections but later becoming a dominant cog in furnishing to beekeepers beehives and fine comb-honey sections for which they were particularly noted. They also produced berry boxes and cartons as well as other wooden material.

In 1944 the entire plant of the company was destroyed by fire with a loss of some \$75,000. Undaunted, with the entire business community of Boyd as well as his relatives rallying to his aid, the plant was entirely rebuilt and of course will continue in operation as usual.

Mr. Lotz was one of the finest individuals the writer has known. Impeccably honest he did nothing to mar this reputation through the years. He

was an ardent fisherman and hunter until his declining years. Mr. Lotz had never married.

The Lotz Company has advertised continuously in the American Bee Journal since 1910.

### M. G. Dadant, President



Dadant & Sons, Inc., Hamilton, Illinois, also publishers of the American Bee Journal, announces the recent election of Maurice G. Dadant to the office of President of the Company. Maurice is also Associate Editor of the Journal. He succeeds his brother, Louis C. Dadant who is retiring from active participation in the business.

The many friends of the Dadant family, throughout the industry, will recall that the two men, with a third brother, Henry Dadant, took over the management of the business from their father, C. P. Dadant, many years ago. Henry is still in charge of development work for the company.

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Stewart Taylor, Camargo, Illinois

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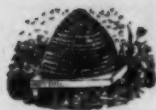
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## Colony Production is Related to Wintering, Food and Population

Perhaps no one research man has given us more facts that we can incorporate into management than Dr. Clayton L. Farrar of the University of Wisconsin, now head of the Bee Culture Office for the United States Department of Agriculture. His studies have contributed considerable to our understanding of wintering, food and population. In "The Winter Cluster" in the "Hive and the Honey Bee" he says: "The majority of bees taken daily from the bottom boards of hives containing overwintering colonies, revived when taken into a warm room and contained food in their honey stomachs. This loss seldom totaled more than 2 to 5 thousand bees during a 3-month broodless period which is not serious for colonies with approximately 30,000 bees. The bees that were lost probably became chilled because they failed to accompany a contracting cluster."

In our opinion that revised our thoughts about wintering. It means that wintering is more dependent on the total cluster, which should be large, than on packing or any other consideration except the supply and availability of food.

Then his studies pointed out that food consisted of honey within reach in sufficient amounts, if possible right

over the cluster, and pollen with the honey. Pollen reserves are often inadequate for winter and early spring brood rearing and spring dwindling seldom occurs in colonies that have enough pollen over winter. Pollen must be located within the



Dr. Clayton L. Farrar

cluster if it is to be used in winter brood production. Colonies that have a population in spring that has been increased in late winter are ready for management leading to huge populations at flow time.

For maximum production Dr.

Farrar was the first man to put two queens to work making a big force of field bees for flow time. His two-queen plan of management takes that well wintered colony and introduces a new queen from the South six to eight weeks before the expected flow. If pollen reserves get low, pollen supplement will prevent any lag in brood.

Farrar likes a stack system for utilizing two queens. In the Journal for June 1952 and for April 1954 his plan and variations are described in detail. Some have other ways and variations of their own they prefer to his stack plan. We have tried most plans now in use to utilize the bees from two queens and we have also tried plans of our own to get the benefits that Dr. Farrar has found possible from two queens.

We like the reversal, separation and reunion method the best. Not all colonies are in condition for any plan. They must have normal populations and good queens. Since we use the large Dadant hive and shallow supers, the winter stores are in the super food-chambers as well as in the large hive. So in April each colony to be used for two queen

(Turn Back To Page 59)

Bee yard at the bottom is one of John Holzberlein's in Colorado who was one of the first commercial men to see the value of the Farrar ideas and put them into practice. Most of the colonies in this yard were produced from two-queens.

The single colony at the right is one of Farrar's. It is an entire shallow super colony for both brood and storage. Can you match this for honey production?





# — TOP NOTCH RECIPES —

**A Contest —** A new contest by our Contest Editor, Pat Diehnelt. These recipes have been tested by Pat in her own kitchen so you may be sure of them. The rules are simple: write legibly when you enter this contest; give complete directions and exact measurements. Be sure to include your name and address on the recipe sheet. Include a brief statement about the origin of the recipe. Only one recipe on a sheet, please. The sender of the winning recipe will receive an eight and a half by eleven inch bordered and printed certificate suitable for framing, with the contestant's name and embodying the actual recipe. Also a three year subscription free to the Journal plus an illustrated and printed honey cook book. The number two contestant will get a one year subscription and the cook book; the third, a 6 month subscription and the cook book; the balance 4 months each.

## THE WINNER

*Mrs. Arnold Perlick, Suring, Wis.*

### Sour Cream Cookies

A tasty drop cookie, suitable for any occasion

- 1 cup butter
- 1 cup sugar
- ¼ cup honey
- 2 eggs
- 2 cups sifted flour
- 1 teaspoon salt

- 1 teaspoon cinnamon
- 1 teaspoon ginger
- 1 teaspoon soda
- ½ cup sour cream
- 1 cup dates, chopped
- 3 cups quick cooking oatmeal, uncooked.
- Cream shortening, sugar, and honey. Add eggs and beat until fluffy. Sift together flour, salt, spices, and soda.

Add to creamed mixture alternately with sour cream. Add quick cooking oatmeal and dates. Mix well. Drop from a teaspoon onto a greased cookie sheet and bake 10 - 12 minutes at 375°.

Makes 9 dozen drop cookies. Total cost approximately \$1.03. Calories per cookie - about 52.

### Number Two Winner

*Mona Schafer, California Honey Advisory Board, San Marino, Cal.*

### Honey Date Bran Bars

Inexpensive, tasty, and deliciously different

- 18 Bars, 1 pan, 9 x 9 in.
- ½ cup Flour, sifted
- 1 teaspoon Baking powder
- ¼ teaspoon Salt
- 1 cup Dates, pitted, finely cut
- ½ cup Nutmeats, chopped
- ½ cup (1 indiv. pkg.) Whole bran cereal
- 2 Eggs
- ¾ cup Honey, slightly warm
- 1. Sift flour with baking powder and salt. Combine with dates, nutmeats, and whole bran cereal.
- 2. Beat eggs until very thick; beat in honey a small amount at a time. Add flour mixture; beat well.

- 3. Spread batter about ½ inch thick in greased shallow pans.
- 4. Bake in moderate oven (375°F.) about 25 minutes. Cut into bars while warm and sprinkle with confectioners' sugar, if desired.

1 Bar = 3 x 1½ inches. Total cost approximately \$0.66. Calories per 3 x 1½" bar - about 108.

Mix in order above. Chill dough. Roll out ¼" thick, place on greased cookie sheet. Bake 8 minutes at 375°. Makes 12 to 13 dozen 2¼ inch circles. Total cost approximately \$1.11. Calories per cookie - about 40.

### Runner Up

*Also Mrs. Chesley Harbro, Grove City, Minn.*

### Honey Jumbles

No shortening here. Store in a moist container for a delightfully chewy cookie

- 1 cup white sugar
- 1 cup honey
- 2 eggs
- 2 teaspoons soda in
- 2 tablespoons hot water
- 2 teaspoon anise seed
- 4 cups sifted flour.
- Mix, then chill dough over night. Roll into balls the size of small walnuts. Place 2" apart on greased cookie sheet. Bake 12-15 minutes at 350°.
- Makes 6 to 7 dozen 2" cookies.
- Total cost approximately 46c. Calories per cookie - about 42.

### Number Three Winner

*C. Smola, Cleveland, Ohio*

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- 1 ½ cups sugar
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- 1 cups butter
- 2 beaten eggs
- 1 teaspoon soda
- ¼ cup honey
- ¼ cup milk
- 6 cups sifted flour
- 1 teaspoon vanilla
- 1 cup grated black walnuts

### Contest Editor—

**Pat Diehnelt**



### Suggested Contests

Let's have a certain type of recipe each month. It will make the judging much easier and perhaps will be more seasonably appropriate. I suggest Breads for March; Cakes for April; Springtime Salads for May; Summer Drinks and Punches for June; Picnic Packing Cookies for July; Vegetables for August; Meats for September; and Dieting Specialties for October.

This month it's Cookies. March will be BREADS. Now, here is the rub, you must get your recipes in about as soon as you read this because I have to try them and rate them and that takes time. If there is any hitch in this schedule one month may be dropped to allow a greater interval. We'll try it as it is for now.

If there are too many recipes for any one issue the classification may be continued the following month. Gosh, can that be possible? Too many recipes! Good luck to you—Pat.



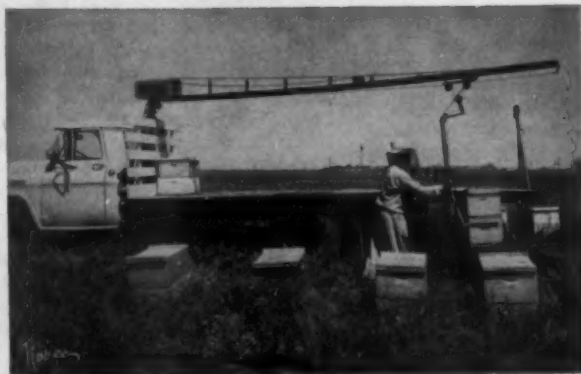
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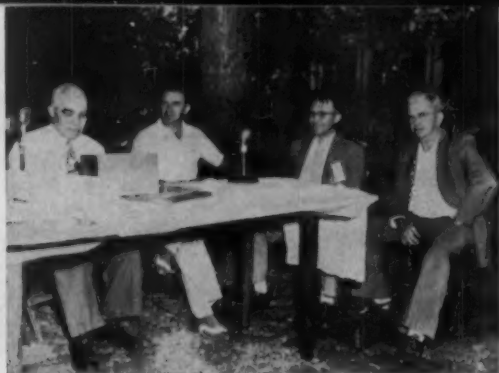
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# Getting Together

Cook DuPage, Illinois, again. These boys do perform. Here is a tableful of dignitaries. From left to right, L. P. Baker, V. E. Rocks, Dr. Walter Rothenbuhler, our Science Editor, and Dr. V. G. Milum, University of Illinois.

## Connecticut, New Haven, Feb. 28

The Connecticut Association's winter meeting will be Feb. 28th at 10 a.m. at the Agricultural Experiment Station Auditorium on Huntington St. in New Haven. The speaker for the day will be Dr. Kenton L. Chambers, Associate Professor of Botany, Yale University and Fellow of the National Science Foundation. Subject: "Insects and the Evolution of Flowers." Pot luck lunch with coffee furnished. A welcome is extended to all beekeepers and friends. Philemon J. Hewitt, Jr. Publicity Chairman

## Virginia Association, Lynchburg, February 25th

The Virginia State Association will have its regular winter meeting in Lynchburg on Feb. 25th at the Quality Dairy. This will be an all day meeting. There are some good speakers being lined up and there will be a report on the Tampa meetings. All beekeepers are urged to attend. Henry W. Weatherford Secretary

## Eastern Missouri, Clayton, Feb. 3rd

The first regular meeting of the year will be Feb. 5th in the Clayton Court House. An interesting program is being prepared to be followed with refreshments.

At the last meeting on Nov. 4th the following officers were elected: President, W. Wallace Daugherty, St. Louis; First Vice-president, Wm. Warren; Second Vice-president, Emil J. Meyer; Secretary, John Evans; Treasurer, Hans Kurschen; Trustee, M. L. Lueddecke.

For the first meeting the new presi-

dent is using a blackboard and copying an article from the August Journal on the basic purposes of an association. He will use the same plan at following meetings. W. Wallace Daugherty President

## Midwestern, (Missouri), Kansas City, Feb. 8th

The Midwestern Association will hold its regular monthly meeting at the I.O.O.F. Hall, 812 Westport Road, Kansas City, at 2:30 P.M., Sunday, February 8. G. L. Brocker is to speak on the subject "Maintenance of the Beekeeper's Equipment." Movies and refreshments. Everyone welcome. Carroll L. Barrett Secretary

## Middlesex County (Mass.) Waltham Field Station, Feb. 28th

The February meeting of the Middlesex County Association will be held Saturday evening the 28th at the Waltham Field Station at 6:30. Each member will bring a casserole, baked beans, salad or dessert. Coffee will be served by the Association.

The special feature of this meeting will be a symposium on American Foulbrood Treatment and Disposal by Mr. Baptist, Mr. Neunzer, Mr. Stevens and Mr. MacInnis. Other members present will be asked to participate.

At our January meeting Mr. Roy Paget, president of the Tarrant County Archeological Society of Texas gave us an interesting account of his experiences in Texas.

Mr. Furber, our president is recovering from a coronary attack and we hope will soon be with us. M. Southwick, Secretary

## Cook-DuPage Annual (Illinois) Midlothian, Feb. 21st

The Cook-DuPage Association will hold its annual meeting and banquet on Saturday, February 21, at Cavalini's Restaurant, 3845 West 147th Street, Midlothian, Illinois. Time—Afternoon Meeting—2:00 P.M. to 5:30 P.M.—Banquet—6:30 P.M.

The scheduled speakers at the afternoon meeting are: Dr. V. G. Milum, University of Illinois, Charles Dandant, Dadant & Sons; Carl E. Killion, Chief Apiary Inspector for Illinois; Mrs. Harriet M. Grace, Director, American Honey Institute and L. M. Leiper, President, Illinois State Beekeepers' Association.

At the Banquet, Mr. Alan Root, General Manager, The A. I. Root Company, will serve as toastmaster. Dr. Walter C. Rothenbuhler, Iowa State College, will be the featured speaker. Following will be the coronation of Audrey Petras as the Cook-DuPage Honey Queen for 1959, installation of officers and numerous door prizes.

Anyone interested in bees or beekeeping is cordially invited to attend. For banquet reservations contact the secretary, Mrs. Grace E. Sedlak, Rt. No. 2, Box 461, Oak Lawn, Illinois.

## Vermont Winter Meeting, Barre, Feb. 10th

The winter meeting of the Vermont Association will be in the County House Restaurant at Barre on Feb. 10th from 11:15 a.m. to 4 p.m. Program follows:

11:15 A.M.—Business meeting  
12:30 P.M.—Luncheon  
1:30 P.M.—"Beekeeping for 4-H Clubs"  
Prof. W. W. Clark, Extension Agriculturist, Penna.  
2:30 P.M.—"Legal Aspects of Honey Marketing"  
Mr. Arden LaPlant, Vermont Division of Weights & Measures

3:00 P.M.—"How to Recognize American Foulbrood"  
Mr. Robert Mead, Vermont  
Apiary Inspector  
3:30 P.M.—Open  
4:00—Adjourn  
William J. Damour  
Secretary

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**Central Jersey, Ocean Co. Ag. Center  
Feb. 13th**

The Central Jersey Association will meet at Ocean County Agricultural Center near the intersection of state highways 9 and 10 at 7:30 p.m. on Friday, Feb. 13th. George Duffhouse, former Inspector, has plans for an interesting talk. This will be followed by a film in color on the pollination of cranberries. Visitors are welcome. Forrest Campbell  
Secretary

**Apicultural Society of Rhode Island  
Rhodes, March 12th**

The Society will open the 1959 season with a Honey Cookery Awards Program in connection with the R. I. Farm and Home Show, at Rhodes on the Pawtucket, March 12 at 7 P.M. Rhode Island beekeeper families and the 4-H Clubs of Rhode Island will compete for awards. During the judging of the entries a special beekeeping program will be in progress open to the general public. After the presentation of cash awards the general public will be invited to sample the honey

cookery. The Society has added a new category this year, Apple Pie (two crusted), which should have a two fold purpose—that of introducing the general public to the use of honey in the preparation of apple pie and also support the apple industry in Rhode Island. Massachusetts and Connecticut beekeepers are cordially invited to attend this program.  
John P. Card  
Secretary

**Annual Meeting, Michigan**

At the annual meeting, Dec. 12, the Michigan Association voted to send the Michigan Honey Queen, Miss Kay Seidelman, to Tampa to compete in the First National Honey Queen Contest. She will go with her parents, Mr. and Mrs. George Seidelman.

Walter Edwards, Jr. and Walter Becker were chosen as delegates to the Federation meeting. 1959 officers are: President, Walter Edwards, Jr. Mesick; Vice President, Arnold Hilbert, Traverse City; Secretary, Margaret Seidelman, Ionia; Treasurer, Ottomar Roth, Reese.

The following resolution was adopted: Due to the increase in the cost of bees and supplies and the greater operating costs, the Association recommends that the price for pollination service be not less than \$6.00 per colony in 1959.

The Association is also looking into the possibility of offering Blue Cross-Blue Shield hospital insurance under the group plan to members. This will be possible if 75% of the members participate. Those already with Blue Cross insurance will count.

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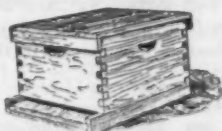
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# Your Questions Answered—

## Requeening

Is requeening with a queen cell a good plan? How many queen cells should I leave on a comb; one, or more?

**Answer:**

Requeening with a good queen cell is all right, cut the best looking cell from a cell bar or from a comb with suitable cells and press into the surface of a comb of the colony you wish to requeen. Of course, the queen of the colony should be disposed of before this. Just choose a good fat cell and only one.

G. H. Cale.

## Killmoth on Comb Honey

From D. H. White  
Jacksonville, Fla.

Would it be safe to use Killmoth on comb honey? What amount should be used on stacks of standard supers of comb honey 12-14 high?

**Answer:**

I produce comb honey and also shallows of comb honey and the usual extracted honey. When I take off honey I load it on, regardless of kind, and put about a teaspoonful at the top of each stack under an inner cover on a soft paper. Then when it is unloaded in house no moth will develop in it until it is time to extract or handle. Also when I set up comb for gassing I use a teaspoonful to five supers with a pad board on top. You can use cloth, tissue or any soft material on which to put the dope.

I suppose I have used more KILL-

MOTH than most producers and I have never found the least taste or odor in honey, comb or extracted. Don't worry about it. However, if you want to grade and pack from stack, air it out for a day or so before and if there should be a trace in the stack it will be gone then. And remember you won't have any moth from eggs, no larvae, and no adults, unless you store where moth from other equipment can lay in cracks and so finally get in. Nothing will stop that. Frequent doping only will do it. Under those circumstances, since it takes about three weeks for new moth larvae to develop, you would have to dope about that often, at least in a month. Moral is, don't store outdoors or in a building with undoped equipment.

G. H. Cale

## Laughing Gas and Requeening with Cells

From C. H. Smith  
Texas

Could I use laughing gas to paint queens and install package bees. I have used it some on vicious bees and it doesn't seem to harm them in the least.

**Answer:**

You can use laughing gas in marking queens, gassing her either with colony or in her cage. You can also use laughing gas in installing package bees. You remove queen cage from package, take out enough frames from hive to admit cage, gas bees and dump them in hive, replace

combs, open queen cage and place it in the hive and either between combs or down among the bees and replace hive cover. It's just that simple.

We have never had any ill effects from the use of gas; if you should give more than needed they will just sleep a little longer. Of course you understand bees should never be gassed when there is danger of freezing, which would not often happen in your locality, nor should they be gassed when there is danger of robbing unless you screen entrance until they get reestablished.

Answered by  
L. R. Stewart  
Newport, Indiana

## Old Honey

From Elizabeth R. Peck  
Elgin, Ill.

While looking for some empty jars this fall I came across some jars of old honey. It is sugared and dark colored. Would you advise me to melt it and feed it to the bees in spring? If a sulfa tablet is added will it kill any germs?

**Answer:**

The honey you mentioned will do to liquefy and feed in the spring if you add one sulfa tablet or 1/4 of a teaspoon of soluble sulfa (sodium sulfathiazole) to the feeding. It will be a stimulant and also control for American foulbrood if there is any present.

In melting up honey this way to feed, I usually add about 1/2 water to thin it. The bees take it better.

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50-99	1.55	3.85	4.85	5.85	6.85
100 and over	1.50	3.75	4.75	5.75	6.75

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3 # 2 lb. Pkg. 24 lb.	1.64	1.92	2.33	2.89	3.53
1 # 3 lb. Pkg. 9 lb.	.90	1.00	1.15	1.35	1.59
2 # 3 lb. Pkg. 18 lb.	1.41	1.61	1.92	2.34	2.82
3 # 3 lb. Pkg. 27 lb.	1.76	2.07	2.54	3.17	3.89

A crate of three packages of any size is the largest that can be shipped by Parcel Post. The above rates include both postage and required special handling stamps. For either four pound or five pound packages add .25 per package to 3 lb. rates to cover additional postage. For distances greater than zone 6, consult your postmaster.

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## BEES AND QUEENS

**ITALIANS**—Packages, Queens. Martz, Rt. A2, Box 846, Vacaville, California.

**DUE TO** illness regular shipper will sell bulk bees at 50c per lb. You shake. Have complete setup, cabin to camp in while here, can sealer, some cages available. 300 lb. and up per day, weather permitting. 1,000 hives in northern California. Write box F.E., c/o American Bee Journal, Hamilton, Illinois.

**CARNIOLAN-CAUCASIAN:** 2 lb. pkg. \$4.00 each, 3 lb. pkg., \$5.00 each, untested queens, \$1.00 each. Booking orders for April, May 1959. Tillery Brothers, Rt. 3, Greenville, Ala.

**ITALIAN QUEENS** by Air Mail - 1 to 24, \$1.40 each; 25 - 49, \$1.30; 50 up, \$1.20. Altamaha Apiaries, Gardi, Georgia. Telephone Jesup, Garden 7-3689.

**BRIGHT ITALIANS** 3 lb. with queen, \$4.90; 2 lb. with queen, \$4.25; f.o.b. Queens \$1.25, P.P. Sheppard Apiaries, Aberdeen, N. C.

**THE GOLDEN APIARIES** Italian bees - 3 lbs. with untested queen, \$4.40 each; 4 lbs. with untested queen, \$5.40 each. Queenless packages, deduct 80c per package. Live delivery and a health certificate with shipment. Maurice Roy, Hessmer, Louisiana.

**WILL SHIP BEES** in your cages seventy cents pound after May 15th. Can supply new cages. A. V. Dowling, Valdosta, Ga.

**3-BAND ITALIAN** and Carniolan bees - 3 lbs. with queen, \$5.00; 5 lbs., \$6.80. Queens \$1.25. Luther Pickett, Efland, N. C.

**FOR SALE** - Queens, Carniolan or Caucasian, \$1.00 each. Shipment starts about May the first. A few packages at \$4.50, 3 lbs. with queen. Roy Waddell, Rt. 3, Woodruff, S. C.

**FOR SALE** - Queens, personally reared; 1 - 9, \$1.20; 10 - 49, \$1.00. Health certificate, prompt service. Every queen a producer. Guaranteed to be shipped on shipping date. Add 5c extra for Air Mail. M. D. Sawyer, 206 Pershing Hwy., Bunkie, La.

## FOR SALE

**FOR SALE:** Royal Jelly. Royal Jelly Enterprises, 1017 Los Carneros Avenue, Napa, Calif.

**TO REDUCE OPERATIONS** will sell up to 1000 colonies, nuc, singles or with supers. Either California or Arizona. D. L. Alexander, Rt. 1, Box 16, Holtville, California.

**ROYAL JELLY** capsules (with added vitamins) 25 mg. box of 30, \$2.15, 50 mg. box of 30, \$3.50. New pack (without vitamins) \$7.50 per 100. Beauty Cream 2 Oz. \$2.00. Prairie View Honey Co., 12303 Twelfth St., Detroit 6, Michigan.

**FREE CATALOG:** Cypress Bee Hives and free supplies. Save up to 40% on hives that last for less. Myers Craft Manufacturing Co., Burgaw, North Carolina.

Copy for the department must reach us not later than the tenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent. Rate of Classified advertising - 16 cents for each word, letter, figure or initial, including the name and address. Minimum ad. ten words.

As a measure of precaution to our readers we require reference of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on comb must guarantee them free from disease or certificate of inspection from authorized inspector. The conditions should be stated to insure that buyer is fully informed.

**EQUIPMENT** for complete honey bottling plant, including filter press, liquefying tanks, pipe lines and connections, pump, bottling tanks, compressor with cooling box for processing creamed honey, other misc. items. Liquefying capacity about 2 tons per day. Write Box AEM, c/o American Bee Journal, Hamilton, Illinois.

**DOCTOR'S ORDERS.** Have 1,000 beehives on alfalfa pollination location. Will sell part or all to reliable party. Rental will pay for them. Central California location. Write Box C.A., c/o American Bee Journal, Hamilton, Illinois.

**150, 10-FRAME HIVE BODIES** and 150 super lids and bottoms. L. Leinbaugh, Lisbon, Iowa.

**FOR SALE** - 40 colonies in 2 bodies, supers and equipment for 75. Ralph W. Yerkes, Howell, Mich.

**ONE FIFTY FRAME** Woodman stainless steel extractor, used as demonstrator, with new Simplex automatic control and drill motor complete. \$600 f.o.b. Cannon Falls, Minn. Banker's Honey Market, Cannon Falls, Minn.

**PAPER CARTONS** for 5 gallon cane, also for 5 and 10 pound pails. L. D. Taylor, 402 Wendy Heights, Council Bluffs, Iowa.

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**FOR SALE** - One Crawford uncapping machine brand new, never used. Price \$600.00 at Sacramento, approximately one-half of new price. Thos. S. Davis, 3129 Howe Ave., Sacramento, Calif.

**AS I HAVE RETIRED** from the bee business and disposed of my bees and hives, am offering for sale two central extracting and storage plants, one at Bay City, Mich., and one at Filion, Mich. Each of sufficient size to handle two thousand colonies. Am offering these each separate and either completely equipped with extractors, tanks, etc., or without this equipment. There are about forty locations surrounding each plant, with cement block hive stands in them. Write for particulars to Oscar H. Schmidt, Rt. 4, Bay City, Mich.

**FOR SALE** - New supers 9% depth with metal frame rests, \$1.20; hundred or more, \$1.10. Kehm Bros. Apiaries, Airport Bldg. T-112, Mailing address 222 East 7th Street, Grand Island, Nebr.

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**STANDARD HOFFMAN FRAMES**, \$75.00 per M. Dean F. Gilliland, 348 W. Deodara St., Vacaville, California. Phone Hickory 8-5408.

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**LARGE QUANTITY** light amber unheated honey in steel drums with removable heads. York Bee Company, Jesup, Ga.

**WHITE CLOVER HONEY** in sixties. Ralph Gamber, 910 State, Lancaster, Pa.

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**FOR SALE** - 60 cases light amber honey (24 one pound jars per case). Fine flavor, bright color. No reasonable offer refused. Dixie Honey Company, 205 Oak Drive, Belton, S. C.

## HONEY and BEESWAX WANTED

**WANTED**—extra white, white and light amber honey in 60 lb. cans. Cloverdale Honey Co., Fredonia, New York.

**WANTED**—Extra white and light amber honey. Let us ship you the containers. Sell us your honey for CASH on delivery. The Hubbard Apiaries, Manufacturers of Bee Supplies and Comb Foundation, Onsted, Mich.

**HONEY AND Beeswax** wanted. Melford Olson Honey Co., 5201 Douglas Drive, Minneapolis 22, Minnesota.

**WRITE FOR SHIPPING TAGS** and current quotations on rendered beeswax. Any amount from one pound up bought. If you have 25 pounds or more, save 25% by letting us work it into foundation for you. Walter T. Kelley Co., Clarkson, Ky.

**HIGHEST PRICES** paid for honey in all grades. Send samples. Schultz Honey Farms, Ripon, Wisconsin.

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WE have several calls for out of print  
American Honey Plants Books by Frank  
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WANTED TO BUY - Bee outfit in Montana.  
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WILL TRADE '55 GMC 2-ton truck, new  
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CASH for 200 colonies, New York state or  
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HONEY PLANTS - Ask for ILLUSTRATED  
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Seed, one packet each five unusual honey  
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Experienced or inexperienced. In Texas,  
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19 year old Swedish student wants someone  
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would like to come to the United States  
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SENSATIONAL GARDEN TRACTOR. Hoes  
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FOR LEASE - 1,000 colonies bees on share  
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DELMAR L. SMITH  
1954 Scenic Ave., Central Point, Ore.

# —Crop and Market—

by M. G. Dadant

Reports indicate that there is very little honey left in the northeastern and Atlantic states for buyers to pick up. As we progress westward the amount increases with no great amount left for packers until you get to Michigan, Wisconsin, the Dakotas and farther west. Demand should have quickened after the first of the year and inventories were counted, but stocks in hands of producers remain sufficiently large so that packers are not anxious to enlarge their stocks but prefer to wait until in need before buying or offering. On the other hand, producers seem very reluctant to sell at sacrifice prices.

On the whole, offers in the East range at 12 to 14 cents for white with a cent or more less for amber. The bulk of the offers farther west are mostly around 12 cents for white f.o.b. producer, but some as low as 11 to 11½ where the buyer is not in a hurry to increase his inventory.

## HONEY ON HAND

East of the Mississippi River the bulk amount of honey left in the hands of producers is relatively small, say not over 15 percent, with perhaps more in Michigan and Wisconsin. Farther west it may range up to 25 percent, though the amount of the large California crop which has moved out of the hands of producers is amazing. Canada, as usual, is not rushing to

move all honey before a new crop but maintaining reserves so as to be able to feed honey to the customers throughout the year without fail. Since most, or a large share of Canadian honey goes through the co-operatives, the job seems easier.

## ALL HONEY MOVES AHEAD OF NEW CROP?

West of the Mississippi, just about all honey, at least large lots will be gone or in safe hands ahead of new crop. Texas doubts all honey will be accounted for by spring. Same is true of some of the Intermountain states, though the bulk of the producers are out, and the others mostly hoping that by holding they can see an appreciation in the price over what has so far been offered.

Amber seems to be more a drug on the market than the whiter grades, the premium being for such honeys as water white sage and alfalfa.

## RETAIL DEMAND

Retail demand has all along remained good, probably better than the same time last year. Since there was a large crop to sell, this is decidedly so. Had not a large crop occurred in California and to a lesser extent in South Dakota and parts of Nebraska

and Texas, we doubt if there would have been any decided difference in our jobbing demand and price for bulk honey. The eastern states were not burdened with a large 1958 crop, and as a consequence the honey could be fed into the market, as the market demanded it, just as has been and is being done in the Canadian markets.

## PRICE CHANGES

Retail price changes have on the whole not been depressing, especially with eastern and southeastern beekeepers and packers. Prices at retail even advanced over last year to compensate for higher price containers and overhead costs. However, in special instances there has been some cutting to the larger chains, in an effort to dispose of a large bulk of honey at a time, so that here we have had evidence of price depreciation, particularly with the larger packages like the five pound can.

## SPRING POSSIBILITIES

As we stated in earlier columns, condition of bees and of plants have all along looked satisfactory. Food supplies could run short before spring, with a much prolonged cold spell.

Earlier, California conditions were not good for moisture. It is too early to tell whether later rains have been of sufficient amounts to effect a change in the desert areas.

**Honey Wanted—** Cars and less than car. Top Prices.  
C. W. Aeppler Co., Oconomowoc, Wis.

## Items of Interest

### Nevada Inspection Report

Report of the Nevada State inspector shows an average of disease 1956-1958 of less than 2% and inspected at an overall cost of less than 25c per colony. In all 7,000 colonies were inspected each season. The average production for the two seasons figured at 90 pounds sold at a price of from 11 to 13 cents a pound. Floyd Hilbig is chief inspector located at Reno.

### Illinois Inspection

S. J. Stannard, Director of Agriculture for Illinois, reports 27,463 colonies of bees inspected in the 1957-8 year with only 339 found infected with A.F.B., or less than 2%. Carl Killion, comb honey producer deluxe is still on the job as chief inspector.

### Crimson Clover

According to "Seedman's Digest" a new crimson clover variety, "Chief" has harder small seed, greater seed vigor, is less sensitive to defoliation and has a better reseeding habit. The variety was developed at Mississippi State University in cooperation with the U.S.D.A.

### Florida Clovers

Dr. Gordon B. Killinger, Florida A.E.S. economist, has made recommendations on clover best adapted to Florida conditions. They include La. No. 1, Improved La. White and La. white clover; also hairy Peruvian, Arizona, Chilean, African, and Indian alfalfa.

(Seedman's Digest)

### Honey and Dental Care

Australian Bee Journal in its November number quotes a talk given by Dr. Adamson (dentist) on Channel 9-gtv, in which he spoke of the fact that the Australians' teeth are "just about the worst in the world," perhaps due to a deficiency of certain minerals in the soil.

Controlled experiments were made on a group of children in the Sydney Dental Hospital in which it was evident that diet had much to do with dental decay. Dr. Adamson laid part of the fault on heavy consumption of flour and sugars. Natural sugars like honey, on the other hand were all right. Australia has the largest per capita consumption of sugar of any country in the world.

## PACKAGES

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## ITALIAN QUEENS

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### PRICES:

QUANTITY	QUEENS	2 lb. Pkgs. W./Q.	3 lb. Pkgs. W./Q.	4 lb. Pkgs. W./Q.
1 - 9		\$1.40	\$4.35	\$5.45
10 - 49		1.30	4.10	5.20
50 up		1.20	3.85	4.95
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## Package Bees

**No change in price for 1959**

	2 lb. with reg. queen	3 lb. with reg. queen
1 - 24	\$4.75 each	\$5.75 each
25 - 99	4.50 each	5.50 each
100 up	4.25 each	5.25 each

For Island Hybrid Queens add 30c each

Queens clipped free — Marking 10c each

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Packages with Dadant "Starline" Hybrid Queens:				Packages with Jensen's "Magnolia State" Italian Queens:			
	1-24	25-99	100-up		1-24	25-99	100-up
2 Lb. ....	\$4.80	\$4.55	\$4.30		\$4.50	\$4.25	\$4.00
3 Lb. ....	5.90	5.65	5.40		5.60	5.35	5.10
4 Lb. ....	7.00	6.75	6.50		6.70	6.45	6.20
	Starline	—QUEENS—			Magnolia		
	\$1.75	\$1.65	\$1.55		\$1.45	\$1.35	\$1.25

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	1-24	25-99	100 up
2 lbs. with Starline Queen	\$4.55	\$4.30	\$4.05
3 lbs. with Starline Queen	5.65	5.40	5.15
Starline Queens	1.75	1.65	1.55

Queens clipped and marked 10c each additional

For regular stock queens deduct 30c from each of the above figures.

Packages are priced F.O.B. Orland, Calif.

Queens are prepaid airmail if faster — Shipping starts April 1

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	1 - 24	25 - 99	100 - Up		1 - 24	25 - 99	100 - Up
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3 lbs.	5.60	5.35	5.10	3 lbs.	5.90	5.65	5.40
EXTRA CAUCASIAN QUEENS				EXTRA MIDNITE QUEENS			
	1.45	1.35	1.25		1.75	1.65	1.55

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ALL GRADES — 60 lb. Cans or 55 Gal. Drums  
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 Health certificate with each order. Full weight and live delivery guaranteed. 10% down. Phone Marksville 2449

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Postage Prepaid Prices:

	1-9	100 or more
Italian Queens	\$1.30	\$1.20
Starlines	1.70	1.50

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Queens	\$1.00
2 lb. pkg. with Queen	3.50
3 lb. pkg. with Queen	4.50
4 lb. pkg. with Queen	5.50

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Prices:—2 lbs. w/q. \$3.50  
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Young laying queens by air \$1.00 ea.

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Select Italians produced in South Florida available in early February. Dadant Starline Hybrids produced in South Georgia available in early March.

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Stockton Georgia

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#### Queens

Write For Price

**JOE PENCIN**

SKYLINE 3-8148 BOX 517 DAVIS, CALIF.

### Italian Bees and Queens

Dadant's Starline

	1 to 25	Our Regular Stock	25 to 100	100 up
2 lb. package with queen	\$4.50		\$4.25	\$4.00
3 lb. package with queen	5.70		5.45	5.20
For larger packages add \$1.10 per pound.				
Untested queens	1.45		1.35	1.25
Tested queens	2.50			

The prices are for regular stock, so add 30c per package or queen for Dadant's Starline. The stock that makes the honey and very gentle.

Royal Jelly shipped anywhere. Write for prices.

Shipment of bees and queens start March 1st. Satisfaction Guaranteed.

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Geo. E. Curtis & Sons

La Belle, Fla.

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Gentle and Industrious Caucasian queens. Hastings strain used for breeders. Bred for greater honey production, Gentleness, Highly prolific, No excessive propolis, Swarm control and Color. Some package bees. 10% books your order - balance due two weeks prior to shipment. Air Mail. Ready to ship about April 1. No do not clip or mark.

1 to 24	\$1.50
25 to 99	1.35
100 and up	1.20

Quality and Service Do Not Cost — They Pay

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Rt. 2, Box 83

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Phone Sherwood 23881



### STARLINE 4-WAY HYBRID QUEENS

#### BRED IN ISOLATED YARDS

	Circular Free	1 - 24	25 - 99	100 up
Starline Queens		\$1.75	\$1.65	\$1.55
Italian Queens		1.45	1.35	1.25

Reg. U. S.  
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**JOHN G. MILLER**

723 6th St., Corpus Christi, Texas



### BETTER BRED QUEENS

#### Three Banded Italians

Time moves on. Let us book your order early to insure the best service.

	Queens	2 lb. w/q	3 lb. w/q
1 to 24	\$1.40	\$4.25	\$5.35
25 to 100	1.15	3.75	4.75

**CALVERT APIARIES**

**Calvert, Ala.**

### CYPRESS BEE HIVES LAST LONGER

Cypress Bottom Boards 10 or more - \$1.00 each; Cypress Wood Covers 10 or more - \$1.00 each; Cypress Hive Bodies 10 or more - \$1.70 each; Cypress Shallow Supers 10 or more - \$ .90 each; Cypress Deep Shallow Supers 10 or more - \$1.20 each; Metal Covers with Inner Covers 10 or more - \$2.30 each; Masonite Inner Covers 10 or more - \$ .63 each.

Write For Free 1959 Catalog

**MYERS CRAFT MFG. CO.**

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### Package Bees

### Nuclei

### Queens

#### Caucasians

#### Italians

To reduce chance-taking get the best bees. We give you the best produced under the best conditions with skill and experience. Health Certificate, full weight, and prompt service. Call, write or wire.

PRICES:—

Queens, 1 to 24	\$1.60	Package Bees	2 lbs.	3 lbs.
25 to 99	1.55	1 to 24	\$4.70	\$5.95
100 up	1.50	25 and up	4.20	5.40

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**THE COFFEY APIARIES**

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 **Bright Three Banded Italian Package**  
**BEES AND QUEENS**  
 Our Mott strain is the very best

Queens 1 to 49—\$1.25; 50 or more \$1.10; 2 lb. packages 1 to 49—\$4.50; 50 or up—\$4.25; 3 lb. pkgs. 1 to 49—\$5.50, 50 up—\$5.25.

Packages F.O.B. shipping point. Queens prepaid. Write for circular. We guarantee safe delivery.

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**WILLIAMS ITALIAN QUEENS**  
 Large Leather-Colored Three-Banded QUALITY SUPREME  
 Certificate with each shipment  
 1-9 Air Mail ..... 1.25 each  
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**QUEENS**

Italians	Caucasians
<b>PACKAGE BEES</b>	
1-24	25-99 100 up
2 lb. w/q \$3.90	\$3.80 \$3.75
3 lb. w/q 4.90	4.80 4.75
Nice large Queens 1.25	1.20 1.05

All queens are personally reared. Health certificate with each order. Send your order for 1 or 100

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 The leading Rabbit Farming Magazine. Explains the growing meat rabbit industry. Non-fancy. Est. 1931. 8 years \$2.00; 1 year \$1.00; Sample dime.

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10 to 99 ..... \$1.60  
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**Flowers' Quality Italians:** Our bees stand test for honey-gatherers, gentleness, and are very prolific. Bred from hives making up to 300 lbs. and over of honey. They come from Fumidil-Ped Grafting and Queen Yards with a health certificate with each shipment. Don't compare our bees with cheaper bees being offered. All packages with large yellow mated & laying queens.

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Order now for choice shipping dates. Write for information.

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 Order now for Mar. Deliv.  
 2 lb. pkg. w/q ..... \$4.00  
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 Queen, mild Italian... 1.25  
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Carbolineum adds years to the life of wood — prevents decay and termite attack.

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**Italian Bees and Queens**

3 lbs. with queen ..... \$4.10  
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Certificate of health and live delivery guaranteed.

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**Italian Package Bees and Queens**  
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**Dadant's Midnite Hybrids**

2 lb. packages ..... \$4.80  
 3 lb. packages ..... 6.00  
 4 lb. packages ..... 7.20

Queens—\$1.75 each - add 10c for marking and clipping

**CARNIOLANS & CAUCASIANS**  
 2 lb. packages ..... \$4.50  
 3 lb. packages ..... 5.70  
 4 lb. packages ..... 6.90  
 Queens \$1.40 each


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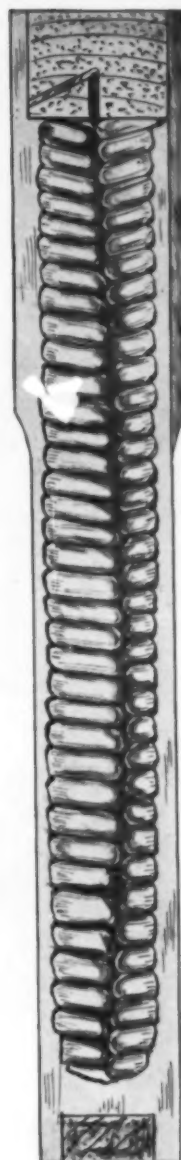
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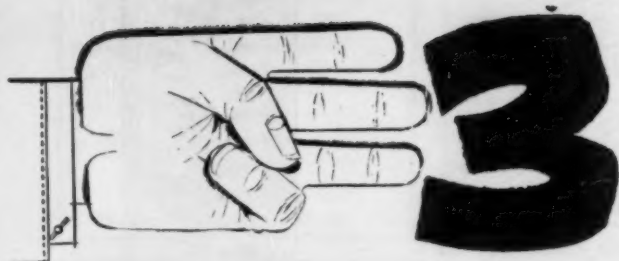


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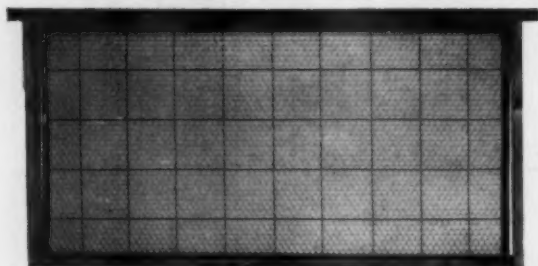
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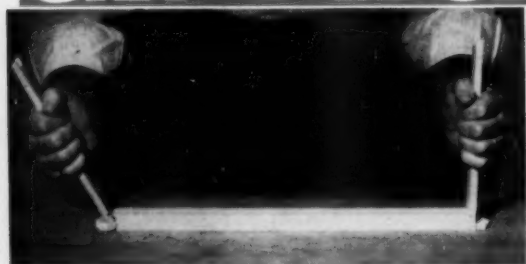
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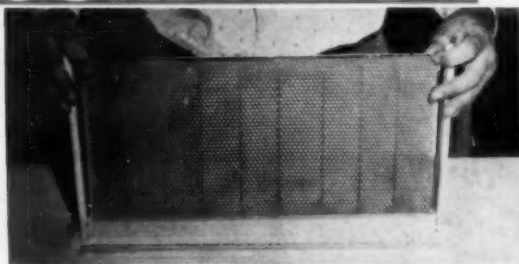
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